CardioPerfect Workstation Software Installation Manual Version 1.6.4

EC REP

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Caution: US Federal law restricts this device to sale by or on the order of a physician.

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The information contained in this manual is subject to change without notice.

All changes will be in compliance with regulations governing manufacture of medical equipment.

The printed version of this document may be out of date. Always refer to the file on the CD for the latest information.

User responsibility

This product is designed to perform in conformity with the description thereof contained in this manual and accompanying labels and inserts, when assembled, operated, maintained and repaired in accordance with the instructions provided. A defective product should not be used. Parts that are broken, plainly worn, missing or incomplete, distorted or contaminated should be replaced immediately. Should any repair or replacement become necessary, we recommend that service be performed at the nearest approved service center. The user of the product shall have the sole responsibility for any malfunction, which results from improper use, faulty maintenance, improper repair, damage or alteration by anyone other than Welch Allyn or their authorized service personnel.

Accessories

The Welch Allyn warranty can only be honored if you use Welch Allyn approved accessories and replacement parts.

Caution: Use of accessories other than those recommended by Welch Allyn may compromise product performance.

Warranty, service, and spare parts

Warranty

All repairs on products under warranty must be performed or approved by Welch Allyn. Unauthorized repairs will void the warranty. In addition, whether or not covered under warranty, any product repair shall exclusively be performed by Welch Allyn certified service personnel.

Assistance and parts

If the product fails to function properly or if assistance, service, or spare parts are required, contact the nearest Welch Allyn Technical Support Center.

USA	1-800-289-2501	Canada	1-800-561-8797
Latin America	(+1) 305-669-9003	South Africa	(+27) 11-777-7555
European Call Center	(+353) 46-90-67790	Australia	(+61) 2-9638-3000
United Kingdom	(+44) 207-365-6780	Singapore	(+65) 6419-8100
France	(+33) 1-55-69-58-49	Japan	(+81) 42 703 6084
Germany	(+49) 695-098-5132	China	(+86) 21-6327-9631

Before contacting Welch Allyn it is helpful to attempt to duplicate the problem and to check all accessories to ensure that they are not the cause of the problem.

When calling, please be prepared to provide:

- Product name, model number, and complete description of the problem
- The serial number of your product (if applicable)
- The complete name, address, and phone number of your facility
- For out-of-warranty repairs or spare parts orders, a purchase order (or credit card) number
- For parts orders, the required spare or replacement part number(s)

Repairs

If your product requires warranty, extended warranty, or non-warranty repair service, call the nearest Welch Allyn Technical Support Center. A representative will assist you in troubleshooting the problem and will make every effort to solve it over the phone, avoiding potential unnecessary return.

If a return cannot be avoided, the representative will record all necessary information and will provide a Return Material Authorization (RMA) number, as well as the appropriate return address. A Return Material Authorization (RMA) number must be obtained prior to any return.

Welch Allyn does not accept returned products without an RMA.

Packing instructions

If you have to return goods for service, follow these recommended packing instructions:

- Remove all hoses, cables, sensors, power cords, and ancillary products (as appropriate) before packing, unless you suspect they are associated with the problem.
- Wherever possible use the original shipping carton and packing materials.
- Include a packing list and the Welch Allyn Return Material Authorization (RMA) number.

It is recommended that all returned goods be insured. Claims for loss or damage to the product must be initiated by the sender.

Limited warranty statement

Welch Allyn, Inc., warrants that the CardioPerfect Workstation computer based product you have purchased meets the labeled specifications of the Product and will be free from defects in materials and workmanship that occur within 1 year after the date of purchase. Accessories used with the Product are warranted for 90 days after the date of purchase.

The date of purchase is: 1) the date specified in our records, if you purchased the Product directly from us, 2) the date specified in the warranty registration card that we ask you to send to us, or 3) if you don't return the warranty registration card, 120 days after the date on which the Product was sold to the dealer from whom you bought the Product, as documented in our records.

This warranty does not cover damage caused by: 1) handling during shipping, 2) use or maintenance contrary to labeled instructions, 3) alteration or repair by anyone not authorized by Welch Allyn, and 4) accidents.

If a Product or accessory covered by this warranty is determined to be defective because of defective materials, components, or workmanship, and the warranty claim is made within the warranty period described above, Welch Allyn will, at its discretion, repair or replace the defective Product or accessory free of charge.

You must obtain a return authorization from Welch Allyn to return your Product before you send it to Welch Allyn's designated service center for repair.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. WELCH ALLYN'S OBLIGATION UNDER THIS WARRANTY IS LIMITED TO REPAIR OR REPLACEMENT OF PRODUCTS CONTAINING A DEFECT. WELCH ALLYN IS NOT RESPONSIBLE FOR ANY INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM A PRODUCT DEFECT COVERED BY THE WARRANTY.

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1. Safety summary

Introduction

We at Welch Allyn are dedicated to provide safe products to our customers. It is the user's responsibility to follow the rules of safety as established for their protection and for the protection of their patients as described in this manual.

The hospital's Biomedical/IT support staff shall require primary skills including disciplines related to maintenance and servicing computer controls/platforms.

Please take note of all safety precautions and warnings provided with the devices before using the devices and the accompanying software.

WARNING: The CardioPerfect family of devices is an integral part of a personal computer-based diagnostic system. The user shall adhere to warnings in order to ensure safe and reliable performance of the system.

- The personal computer (non-medical electrical equipment) shall be situated outside the patient environment (reference IEC 60601-1-1).
- The personal computer used should adhere to the appropriate safety standard for non-medical electrical equipment (IEC 60950, or its national variants), and use of an isolation transformer is recommended.
- Normal isolation transformer does not fulfill the IEC601-1-1 standard and its supplement EEE requirements for transformer unit. To maintain operator and patient safety, consider the requirements of IEC 60601-1-1. Measure the leakage currents to confirm that no electric shock hazard exists.
- The personal computer used should adhere to the appropriate electromagnetic compatibility (EMC) standard for non-medical electrical equipment (CISPR 22/24 - FCC Part 15 - CE, or related national variants).

If it is required for the personal computer to be situated within the patient environment, it is the responsibility of the user to ensure that the system provides a level of safety in compliance with IEC 60601-1-1.

Note: On computers that you plan to use for clinical procedures, disable automatic installation of Windows updates.

Symbols

Documentation symbols	
WARNING	Indicated conditions or practices that, if continued or not corrected immediately, could lead to illness, injury, or death.
Caution	Indicated conditions or practices that, if continued or not corrected immediately, could damage the equipment.

Shipping, storing, and environment symbols	
	Single Use — Do Not Reuse
YYYY-MM	Expiration date
	Keep away from sunlight
	Temperature Range
	Stacking limits

Certification symbols	
CE	Meets essential requirements of European Medical Device Directive 93/42/EEC

Equipment symbols	
SN	Serial Number
REF	Catalog Number
	Type BF Equipment
	Manufacture Date
	Defibrillation-proof type BF applied part

2. Overview

Welcome to the Welch Allyn CardioPerfect® Workstation (CPWS), the medical diagnostic workstation that offers the next step for PC-based medical systems. CPWS includes the following features:

- A database with virtually unlimited storage based on the Microsoft® SQL Server™ database software
- The possibility to integrate different diagnostic tools
- One framework for different diagnostic modules

Note: All CPWS installations include the following free SQL licenses:

- SQL MSDE 2000 can store up to 2GB of data (this accommodates approximately 1500 stress tests, depending on file size)
- SQL Server 2005 Express can store up to 4GB of data.

You can purchase MS SQL licenses from Microsoft for versions that allow unlimited storage.

This manual explains how to install and configure CPWS. For information about using CPWS, see the CPWS user manual. Module-specific instructions are in the user manuals of the applicable modules.

Product configurations

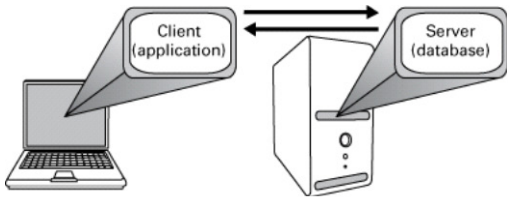
CPWS includes the following components:

- **Server (database)**: You use this component to store and view data sent from clients to this computer. Install only one server at your site.
- **Client (application)**: You use this component to run CPWS with one or more of the diagnostic modules. The client sends data collected by CPWS to the server. You can install one or many clients at your site.

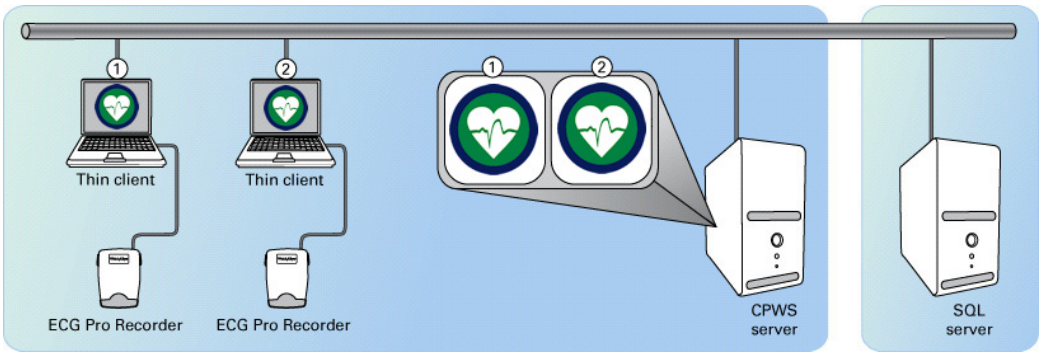
Before installing, determine how you want to configure CPWS:

- **Single-computer configuration**: A stand-alone system on a single computer.

- **Network configuration**: Installing a network configuration means that the server and client components are on different computers. They require an external connection to communicate with each other, typically a network.



- **Thin-client configuration**: Clients can access the application via presentation applications such as Citrix ICA and Microsoft Remote Desktop Services (RDS).



For more information, see “Thin-client interface” on page 23.

The Site Management Tool, a standalone application, provides central administration of site-related data. For more information about installing and using this tool, see “SiteManager” on page 45.

CPWS components

When you install CPWS, you can install the following components.

Software	CPWS client software. The license that you purchased determines which modules are activated.
Database	The CPWS database.
Telemedicine server	The Telemedicine server that you use to send and receive tests through e-mail or a direct TCP/IP connection.
US defaults	A set of default values specific to the US, such as 60Hz AC mains frequency and mph as the speed unit. When upgrading from a previous version your existing, customized settings are not overwritten.

Drivers

Most device drivers are automatically installed when you install the software. To manually install Spirometry and ProLink drivers, see Appendix A, “Installing legacy Unilink USB drivers.”

Upgrades

Note: The database is not compatible with older client software. When installing CPWS, you must upgrade all clients and the database.
Do not use CPWS software on **any** client workstations during this process.

SpiroPerfect update

In versions before 1.5.0, Spirometry’s predicted values were calculated differently than in newer software releases. Predicted values were calculated at the moment a Spirometry test loaded into the system, based on the Norm setting configured under Settings. As of version 1.5.0, the norm values are calculated at the moment the test starts, and the values are stored with the test.

When upgrading from pre-1.5.0 software, the installation process will optionally calculate the norm values for your Spirometry tests already in the database if it detects any Spirometry tests for which the predicted values can be calculated. The upgrade process tries to provide the best possible match between the pre-1.5.0 norm selection active on your system at the time of the upgrade installation, and the norms implemented in new software release, and prompts you to confirm the mapping. If no match is found, the suggested norm selection will be empty. You can use the norm suggested by the upgrade, select a different norm to use, or cancel the calculation of the predicted values.

Caution: In some cases, the norm implementations differ in pre-1.5.0 versions causing differences in the predicted values after recalculation. Full details on the norm implementation differences are available upon request.

System requirements

To work with CPWS software, you need the following minimum recommended configuration.

Note: If implementing CPWS in a thin-client environment, see “Thin-client interface” on page 23.

Item	Resting ECG, ABP, Spiro, Recollect[1,2]	Stress ECG[1,2]	CPWS Server – small office[1]	CPWS Server – enterprise[1]
Configuration	Tower or desktop PC preferred; laptop or tablet	Tower or desktop PC	Tower or desktop PC	Server
CPU	P4 (or equivalent) or higher	P4 (or equivalent) or higher	P4 (or equivalent) or higher	P4/XEON (or equivalent) or higher
Hard disk	20 GB with 5 GB free space	40 GB with 10 GB free space	120 GB with 40 GB free space	200 GB with 40 GB free space RAID 5 array or RAID array controller with memory backup recommended
RAM	512 MB, 1 GB or higher recommended	1 GB or higher	1 GB or higher	1 GB or higher
Monitor resolution	1024x768 true color, 1280x1024 recommended	1024x768 true color	1024x768 true color	1024x768 true color
Monitor size	15" or higher	17" or higher	N/A	N/A
Ports	2 USB	3 USB and 2 serial	N/A	N/A
Operating system[3]	XP SP2 or later, Vista Business SP1 or later, Windows 7 Home Premium, Professional, or Ultimate	XP SP2 or later, Vista Business SP1 or later, Windows 7 Home Premium, Professional, or Ultimate	Windows Server 2003, 2008, 2008 R2; XP SP2 or later; Windows 7 (Home Premium, Professional, or Ultimate)	Windows Server 2003, 2008, 2008 R2
Peripherals	Color printer recommended for Spirometry Compatible with inkjet and laser printers			Printer optional

1 An Internet connection is required for the Telemedicine option or to allow Welch Allyn to provide online technical support.

2 A PC running only CPWS and EMR applications during tests.

If using CPWS software in a language other than English, select a numerical option for the Windows date format (under Regional Options). Formats that include month names are reliable only in the English version of the software.

3 Both 32- and 64-bit operating systems are supported.

3. Install CPWS software

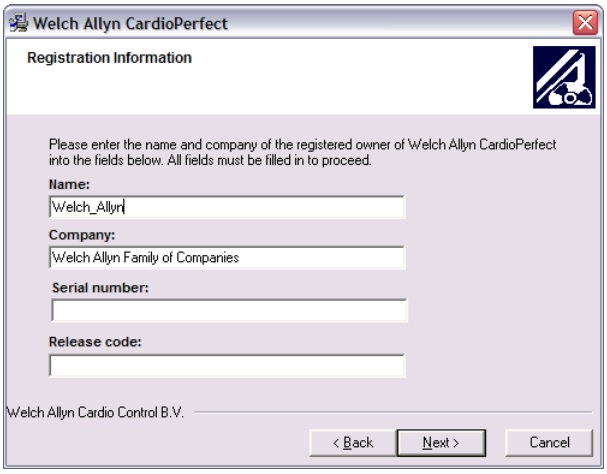
Installing CPWS software also copies selected device drivers (for the ECG recorder and spirometer) to the hard drive.

Caution: Connect USB devices only after the software is installed. Otherwise, drivers must be installed manually.

1. Make sure that you have administrator rights.
2. Close all running programs. Insert the CardioPerfect Workstation CD. The installer menu appears. (If this menu does not appear, explore the CD, and run installer.exe.)

CardioPerfect Workstation installer
• Install CardioPerfect Workstation
• Install Example Data
• CardioPerfect Device Drivers >>
• CardioPerfect Connectivity Tools >>
• 3rd Party Tools and Service Packs >>
• Browse the manuals folder
• View read me file
Exit
WelchAllyn

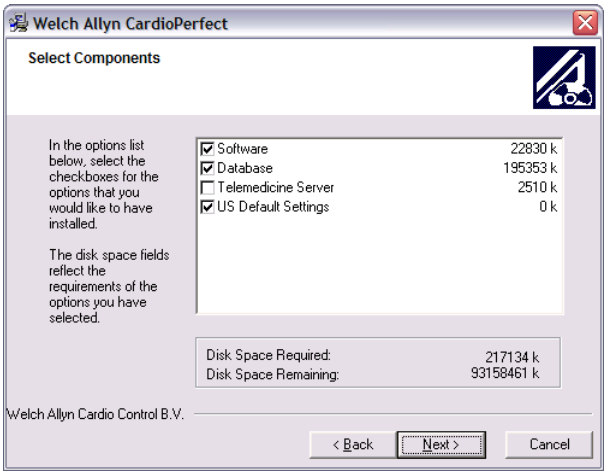
3. Select **Install CardioPerfect Workstation**. The installation wizard runs. Click **Next**, then click **Accept** to accept the software license agreement.


Welch Allyn CardioPerfect
Registration Information
Please enter the name and company of the registered owner of Welch Allyn CardioPerfect into the fields below. All fields must be filled in to proceed.
Name:
Welch_Allyn
Company:
Welch Allyn Family of Companies
Serial number:
Release code:
Welch Allyn Cardio Control B.V.
< Back
Next >
Cancel

4. Enter your registration details (you can find the serial number and release code on the CD case), and click **Next.**

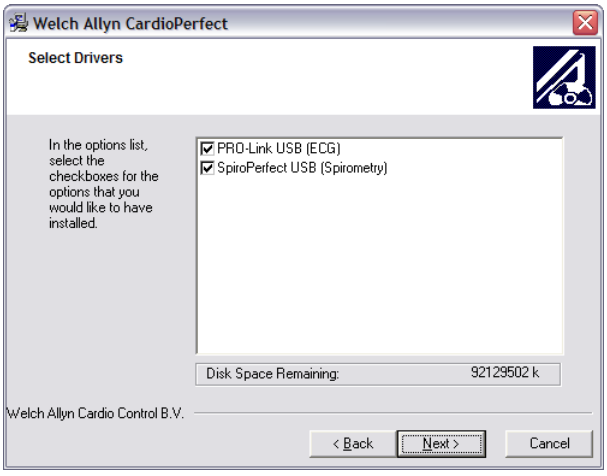
5. Specify where to install the files.

   By default, files are installed in C:\Program files\Cardio Control\MDW. To specify a different location, click **Browse**. After specifying a destination, click **Next**.


Welch Allyn CardioPerfect
Select Components
In the options list below, select the checkboxes for the options that you would like to have installed.
The disk space fields reflect the requirements of the options you have selected.
Software 22830 k
Database 195353 k
Telemedicine Server 2510 k
US Default Settings 0 k
Disk Space Required: 217134 k
Disk Space Remaining: 93158461 k
Welch Allyn Cardio Control B.V.
< Back
Next >
Cancel

6. Select the components you want to install.
   For most US installations, that includes **Software**, **Database**, and **US Default Settings**, as shown in the previous figure.

   You do not have to use the SQL Server database provided with CardioPerfect software. If you already have a database, uncheck the Database option.


Welch Allyn CardioPerfect
Select Drivers
In the options list, select the checkboxes for the options that you would like to have installed.
PRO-Link USB (ECG)
SpiroPerfect USB (Spirometry)
Disk Space Remaining: 92129502 k
Welch Allyn Cardio Control B.V.
< Back
Next >
Cancel

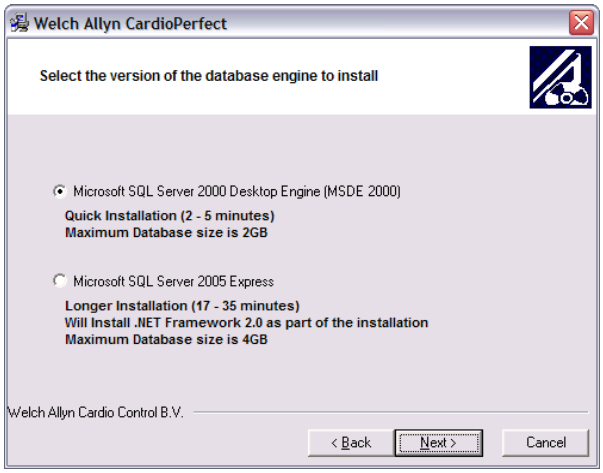
7. Select the device drivers you want to install. If you are unsure which devices you need to support, check both boxes.

   - If SQL Server already exists on the target system, the wizard is ready to start the installation. Click **Next**. A Login dialog may appear.

Login
Enter password of the system administrator 'sa'. If you do not know this password please consult your network administrator.
User Name:
Password:
OK
Cancel

Enter your System Administrator name and password, click **OK**, and go to Step 9.

- If your computer does not have SQL Server, and if you checked the Database option in step 5, the wizard displays the database selection screen.


Welch Allyn CardioPerfect
Select the version of the database engine to install
Microsoft SQL Server 2000 Desktop Engine (MSDE 2000)
Quick Installation (2 - 5 minutes)
Maximum Database size is 2GB
Microsoft SQL Server 2005 Express
Longer Installation (17 - 35 minutes)
Will Install .NET Framework 2.0 as part of the installation
Maximum Database size is 4GB
Welch Allyn Cardio Control B.V.
< Back
Next >
Cancel

8. Choose the database that you want to install and click **Next**:
   - **MS SQL Server 2000 Desktop Engine (MSDE 2000)**
     (Default) Select this option for Windows XP.
   - **MS SQL Server 2005 Express**
     Select this option for 64-bit operating systems, Windows Vista, and Windows 7.

   Only the options supported by your operating system are available for selection.
9. Click **Next**. The wizard installs the software. This takes several minutes and depends on your computer's speed. When installation is complete, click **Finish**.
10. Restart the computer to finish the installation, if required.
11. Click any other desired menu items, as described in the following pages.

You can now use CPWS.

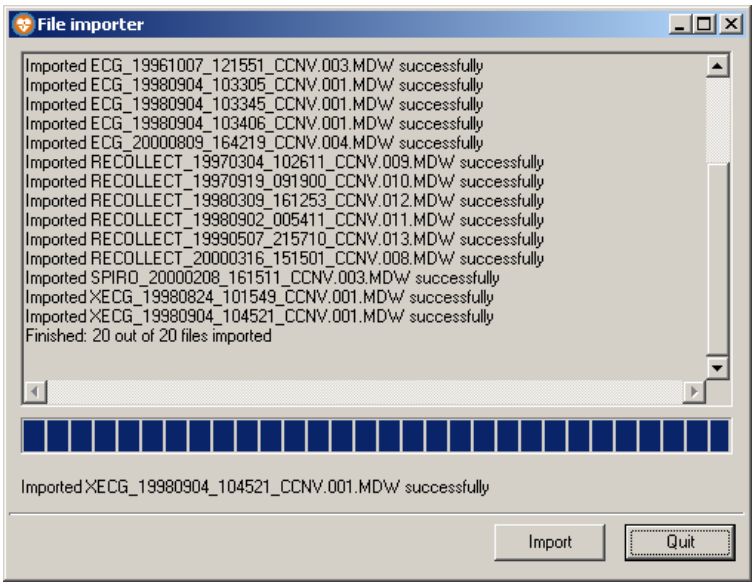
4. Install example data

You can install example data in your database to experiment with.

1. Close all running programs.
2. Insert the CardioPerfect Workstation CD. The installer menu appears. (If this menu does not appear, explore the CD, and run installer.exe.)

CardioPerfect Workstation installer
• Install CardioPerfect Workstation
• Install Example Data
• CardioPerfect Device Drivers >>
• CardioPerfect Connectivity Tools >>
• 3rd Party Tools and Service Packs >>
• Browse the manuals folder
• View read me file
Exit
WelchAllyn

The file importer installs the example data.



3. Press **Quit**.

5. Reinstall USB drivers

To reinstall the USB drivers:

Caution: Connect USB devices only after the drivers are manually reinstalled.

1. Close all running programs.
2. Insert the CardioPerfect Workstation CD. The installer menu appears. (If this menu does not appear, explore the CD, and run installer.exe.)

CardioPerfect Workstation installer
• Install CardioPerfect Workstation
• Install Example Data
• CardioPerfect Device Drivers >>
• CardioPerfect Connectivity Tools >>
• 3rd Party Tools and Service Packs >>
• Browse the manuals folder
• View read me file
Exit
WelchAllyn

3. Select **CardioPerfect Device Drivers**.
4. Select the drivers you want to install:
   - CardioPerfect PRO-Link USB drivers

     Note: If you have older CardioPerfect MD or Portable ECG hardware, see Appendix A, “Installing legacy Unilink USB drivers,” on page 47.

   - USB Spirometer drivers
5. Follow the instructions on the screen.

6. Install Adobe Reader

All user manuals on the CardioPerfect Workstation CD require Adobe Reader to read or print. If you do not have the reader, you must install it.

Note: To download the latest free Adobe Reader, go to Adobe Reader download at http://get.adobe.com/reader/.

1. Close all running programs.
2. Insert the CardioPerfect Workstation CD. The installer menu appears. (If this menu does not appear, explore the CD, and run installer.exe.)

CardioPerfect Workstation installer
• Install CardioPerfect Workstation
• Install Example Data
• CardioPerfect Device Drivers >>
• CardioPerfect Connectivity Tools >>
• 3rd Party Tools and Service Packs >>
• Browse the manuals folder
• View read me file
Exit
WelchAllyn

3. Click **3rd Party Tools and Service Packs**.

4. Click **Install Adobe Acrobat Reader (US)**.
   Follow the instructions on the screen.

7. Browse the user manuals

All CardioPerfect user manuals are on the CardioPerfect Workstation CD in PDF format, and are downloaded to the install location you specified for the CPWS software..

Note: To open PDF files, you must have Adobe Acrobat Reader. If you do not have the reader, see “Install Adobe Reader” on page 17.

1. Insert the CardioPerfect Workstation CD. The installer menu appears. (If this menu does not appear, explore the CD, and run installer.exe.)

CardioPerfect Workstation installer
• Install CardioPerfect Workstation
• Install Example Data
• CardioPerfect Device Drivers >>
• CardioPerfect Connectivity Tools >>
• 3rd Party Tools and Service Packs >>
• Browse the manuals folder
• View read me file
Exit
WelchAllyn

2. Click **Browse the manuals folder**.

   Windows Explorer displays the folder on the CD containing the manuals. Open the appropriate language folder and open the desired manuals.

8. View the Read Me file

The Read Me file describes the contents of the CardioPerfect Workstation CD and includes last-minute information that was not included in the user manuals.

1. Close all running programs.
2. Insert the CardioPerfect Workstation CD. The installer menu appears. (If this menu does not appear, explore the CD, and run installer.exe.)

CardioPerfect Workstation installer
• Install CardioPerfect Workstation
• Install Example Data
• CardioPerfect Device Drivers >>
• CardioPerfect Connectivity Tools >>
• 3rd Party Tools and Service Packs >>
• Browse the manuals folder
• View read me file
Exit
WelchAllyn

3. Click **View read me file**.

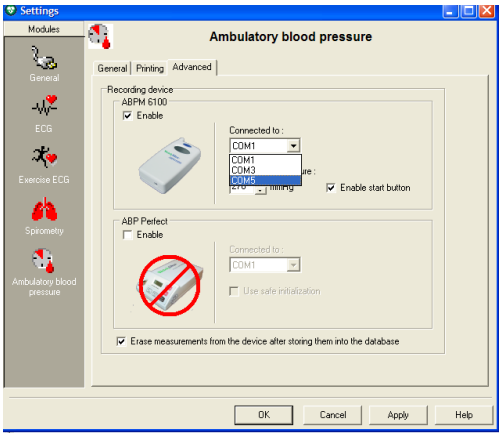
9. Configure the ABPM module

The ambulatory blood pressure (ABPM) module may require configuring for use with a Keyspan® USB serial adapter.

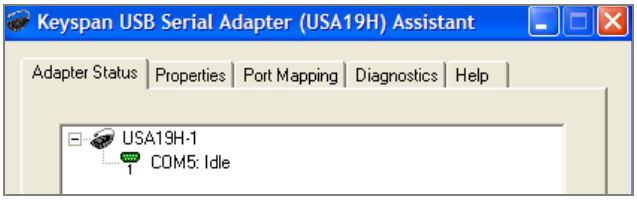
Note: If your operating system driver is not on the Keyspan CD, you may need to go to the Keyspan website and download the driver.

To configure the ABPM module for a USB serial adapter

1. Install the Keyspan software. Follow the Keyspan instructions.
2. Select **Start** > **Programs** > **Keyspan** > **USB Serial Adapter**.
3. Select **Keyspan Serial Assistant**.
4. Verify which COM port is assigned to the adapter.
5. Click to start CPWS software.
6. Select **File** > **Settings** > **Ambulatory blood pressure**.
7. Select **Advanced**.

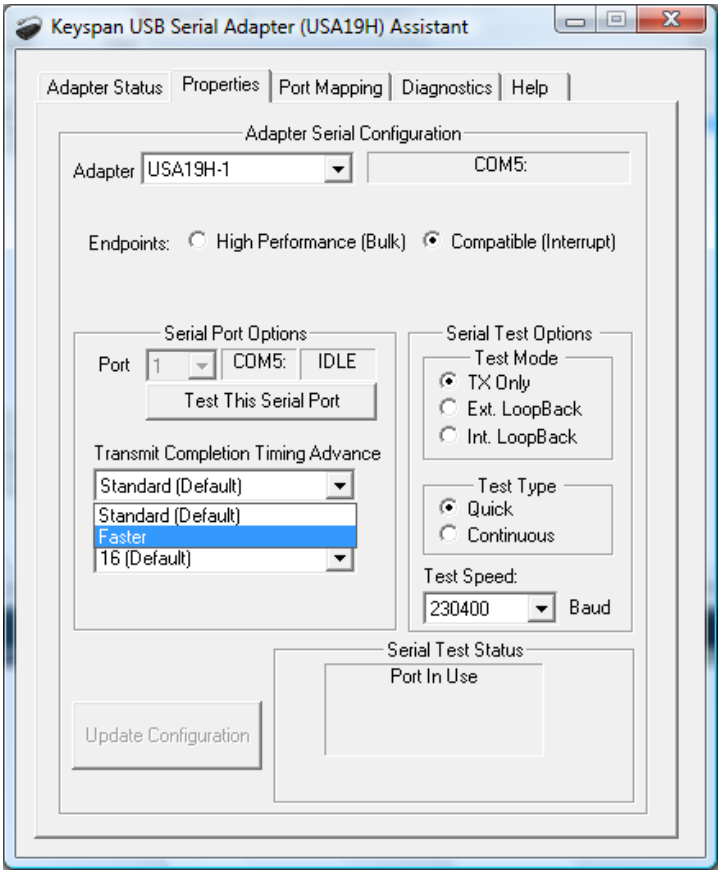


8. Match the COM port to the Keyspan Serial Adapter Assistant.



To configure the ABPM module for a USB serial adapter using Windows Vista or Windows 7

1. Install the Keyspan software. Follow the Keyspan instructions.
2. Select **Start > Programs > Keyspan > USB Serial Adapter**.
3. Select **Keyspan Serial Assistant.**



4. Click the **Properties** tab.
5. Select **Faster** from the **Transmit Completion Timing Advance** drop-down menu.
6. Click **Update Configuration**.
7. Click **Yes** in the **Keyspan Serial Adapter** confirmation box.
8. Click **OK** in the **Device Configuration Update Complete Your Device is Ready to Use** box.

To configure the ABPM module for an RS232 cable

1. Click to start CPWS software.
2. Connect the RS232 cable to an available CPU COM port.
3. Select **File** > **Settings** > **Ambulatory blood pressure**.
4. Select **Advanced**.
5. Select the proper COM port.

10. Install additional options or features

Install Telemedicine software

Telemedicine is an optional extension to CPWS. Without the correct release code, the Telemedicine functionality will not be activated.

With Telemedicine, it is possible to send and receive tests and interpretations to and from predefined contacts. This typically allows expertise sharing and second opinion consults, but might also be used for administrative purposes in situations where replication cannot be used.

Telemedicine offers the following methods for sending and receiving email::

- Email facilities.
- Direct communication, using TCP/IP sockets.

In both cases, the Internet or any other TCP/IP network must be available as transportation infrastructure. You can use a mix of both email and direct socket connection.

Telemedicine, like CPWS, is built using a client / server architecture. This means Telemedicine scales from use on a single standalone computer with a modem, to a configuration of multiple client computers, a MSSQL database server and a telemedicine mail server working together in a LAN network.

Before installing Telemedicine, make sure that the hardware and software requirements are met (see “System requirements” on page 11), determine the type of communication you will use and, if in a network, identify which computer(s) will run as clients and which as mail server.

The Telemedicine option requires significant IT skills to install and configure. Detailed instructions on installation and configuration can be found in Section 10 of the *CardioPerfect Workstation Service and Advanced Installation* manual.

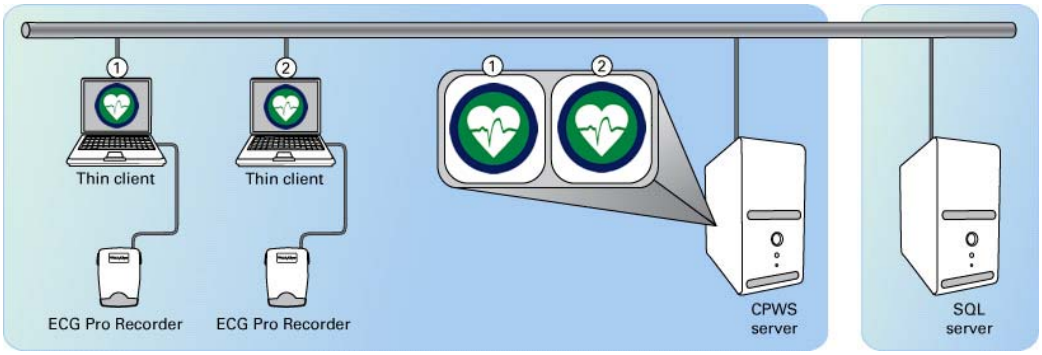
For a more detailed description of how to use Telemedicine, see the CPWS user manual.

Note: Full administrator privileges are required to correctly configure Telemedicine.

---

11. Thin-client interface

If you plan to operate the CPWS in a thin-client environment, install the Welch Allyn PerfectLink® ECG client on the client PC. Clients can access the application via presentation applications such as Citrix ICA and Microsoft Remote Desktop Services (RDS).



Device data acquisition through a thin-client interface requires the following:

- **Resting ECG and Spirometry**: The Welch Allyn PerfectLink thin-client solution.
- **ABPM**: A serial interface. With the serial interface, the system administrator can configure your system to share the serial port over the network between the server and the clients.

Thin-client system requirements

To work with CPWS software in thin-client environment, you need the following minimum recommended configuration:

Item	Resting ECG	Spiro	ABP	Server
Configuration	Tower or desktop PC preferred; laptop or tablet	Tower or desktop PC preferred; laptop or tablet	Tower or desktop PC preferred; laptop or tablet	Tower or desktop PC
CPU	P4 (or equivalent) or higher	P4 (or equivalent) or higher	P4 (or equivalent) or higher	P4 (or equivalent) or higher
Hard disk	5 MB free space	5 MB free space	5 MB free space	120 GB with 40 GB free space
RAM	512 MB, 1 GB or higher recommended	512 MB, 1 GB or higher recommended	512 MB, 1 GB or higher recommended	1 GB or higher
Monitor resolution	1024x768 high color, 1280x1024 recommended	1024x768 high color, 1280x1024 recommended	1280x1024 high color, 1280x1024 recommended	N/A
Monitor size	15" or higher	15" or higher	15" or higher	N/A
Ports	USB	USB or serial	USB or serial	N/A
Connection technology	PerfectLink	PerfectLink	COM port forwarding	N/A

Item	Resting ECG	Spiro	ABP	Server
Operating system[1]	XP SP2 or later, XP embedded, Vista Business SP1 or later, Windows 7 Home Premium, Professional, or Ultimate	XP SP2 or later, XP embedded, Vista Business SP1 or later, Windows 7 Home Premium, Professional, or Ultimate	XP SP2 or later, Vista Business SP1 or later, Windows 7 Home Premium, Professional, or Ultimate	Windows Server 2003, 2008, 2008 R2
Peripherals	Color printer recommended for Spirometry Compatible with inkjet and laser printers			

[1] Both 32- and 64-bit operating systems are supported.

Before you begin

- Make sure that you have administrator rights for this computer.
- Close all programs before starting the installation.

Configure the CPWS server

Install CPWS on the server as described in “Install CPWS software,” starting on page 12. It is not necessary to install drivers for the acquisition devices on the server.

Although the installer may handle this on its own, it is good practice when installing new software on a version of Windows Server to switch to “Install Mode” before installing CPWS or any of its components. This can be accomplished by typing the following command in the command prompt:

```
change user /INSTALL
```

After installing CPWS and its components, you can exit Install Mode by entering the following command:

```
change user /EXECUTE
```

You can get the current status by entering this command:

```
change user /QUERY
```

This applies only to systems with Terminal Services installed or configured when operating in “Application Mode.” If in Remote Administration mode (the only mode available if Terminal Services is not installed), this has no effect.

Configure thin clients for ECG and Spirometry

1. Close all running programs.
2. Insert the CardioPerfect Workstation CD. The installer menu appears. (If this menu does not appear, explore the CD, and run installer.exe.)

CardioPerfect Workstation installer
• Install CardioPerfect Workstation
• Install Example Data
• CardioPerfect Device Drivers >>
• CardioPerfect Connectivity Tools >>
• 3rd Party Tools and Service Packs >>
• Browse the manuals folder
• View read me file
Exit
WelchAllyn

3. Click **CardioPerfect Connectivity Tools**, then click **Install PerfectLink thin client support**.

   The **Welcome** screen appears.

4. Click **Next**.

5. Start a thin-client remote session. Within CardioPerfect running in the remote session:

   a. Navigate to the Settings dialog, then the ECG section and the Recorder tab.

   b. Select PerfectLink as the port to use.

   c. In the Spirometry section, go to the Recorder tab.

   d. Select PerfectLink in the “Connect to” dropdown list.

Note: If you plan to connect the USB PRO ECG or Spiro USB/Serial recorder to several thin-client PCs, install PerfectLink on each thin client. PerfectLink enables the remote server to see USB-connected devices.

Configure thin clients for ABPM

This procedure applies only to ABPM.

To connect ABPM devices, enable COM port forwarding through RDP or Citrix.

- **Microsoft RDP COM port forwarding**. If you use Remote Desktop services (using the RDP protocol), you can select from the options in the Terminal Services Client.

  a. Open **Remote Desktop Connection**.

  b. Select **Options** to expand the dialog.

  c. Navigate to the **Local Resources** tab.

  d. If **Serial devices** is not present on this page, select **More**.

  e. In the **Local devices and resources** list, check **Serial ports**.

  f. Click **OK** and connect to the remote computer.

- **Citrix ICA COM port forwarding**.

  If you use Citrix (ICA), you map the serial port from the server using the following command:

  `net use com`*`x`*`: \\client\com`*`z`*`:`

  where *x* is the server COM port and *z* is the client COM port. Note that `client` is not replaced by the client workstation name; it is the word “client”.

  For NFuse implementations, you may need to change the template.ica file from COMAllowed=NO to COMAllowed=Yes

  For detailed information about enabling COM port forwarding, see documentation from Microsoft or Citrix.

- **Citrix serial port sharing configuration**: In the Citrix Program Neighborhood window (the window containing Citrix connections) use the menu system (the **Tools** menu) to select configuring serial devices. Proceed through the prompts to add a serial port to share through the client. After adding a serial port, devices connected on the client are available to CPWS on the server. For details on configuring shared serial ports, see the Citrix user documentation.

12. About the database

CPWS can use these database engines:

- Microsoft SQL Server 2008 R2 and Microsoft SQL Server 2008 R2 Express
- Microsoft SQL Server 2008 and Microsoft SQL Server 2008 Express
- Microsoft SQL Server 2005 and Microsoft SQL Server 2005 Express
- Microsoft SQL Server 2000
- Microsoft SQL Server 7
- Microsoft MSDE database (a runtime version of MS SQL Server 7 / 2000)

Note: To use with CardioPerfect, existing SQL Server installations must have mixed-mode authentication enabled.

Database installation

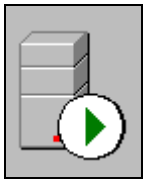
The database installation process installs either the Microsoft MSDE database engine or the Microsoft SQL Server 2005 Express Edition, depending on your installation selection, and creates a database named ccdb in an instance named CARDIOPERFECT. This database contains all information generated by CPWS. A second database called ccdb_audit is installed for maintaining an audit trail when enabled.

Start the Microsoft SQL 2000 server

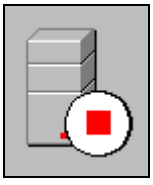
To work with CPWS, the database engine (or MS SQL server) must be running. By default, the database engine (or MS SQL Server) starts automatically when you start the computer. However, you can also manually start the SQL server.

1. Click **Start** and point to **Programs**.
2. Point to the MSDE (or MSSQL7 or MSDE SQL Server 2000) folder and click **Service manager**. The SQL Server Service Manager appears.
3. From the **Services** list, select **MSSQLServer**.
4. Click **Start/Continue** to start MS SQL Server.

   You have successfully started the MS SQL Server when the SQL Server Service Manager icon displays a green triangle instead of a red square.



MS SQL Server is running



MS SQL Server is not running

Start SQL Server 2005 Express Edition

1. Click **Start** and point to **All Programs**.
2. Point to the SQL Server 2005 folder and click Configuration Tools folder and select SQL Configuration Manager. The SQL Server Service Manager appears.
3. From the Services list, select SQL Server 2005 Services.
4. Select SQL Server (CARDIOPERFECT), point to the **Action** button, and select **Start**.

13. Before configuring CPWS

Security

CPWS has a security mechanism that can be used to prevent certain users to take certain actions.

You can control:

- The users that access CPWS. This is done through user accounts and passwords.
- Actions users can perform with CPWS. This is done by assigning each user a role. Each role can only perform a predefined set of actions.

Access and action control can be configured with the user administration functionality in the Administrator tool.

Authentication types

Authentication is performed through the login process. When logging into CPWS, a user must provide a password as proof of identification.

CPWS can use these types of user authentication:

- NT authentication
- Database authentication
- Anonymous

NT authentication

NT authentication takes advantage of Windows NT user security and account mechanisms. Users with a valid NT account can start CPWS without entering a user name and password. Instead, the Windows NT user name and password are used. So, you can control access to Windows NT and CPWS with just one user account.

Database authentication

Database authentication uses CPWS security system.

Anonymous authentication

At log-on, there is a third option called “anonymous.” You can use this only if the “ccguest” account exists. Anonymous access should in general be avoided and may be illegal according to local regulations. On systems with HIPAA support, anonymous access is disabled.

Windows NT authentication properties	Database authentication properties
Windows 2000 / XP	Windows 2000 and XP
One user name and password for both OS and CPWS	One user name and password for OS One user name and password for CPWS (validated by the SQL server)
No login screen at startup (optional)	Always a login screen at startup
Password aging and login auditing	No password aging or login auditing
User accounts are assigned the role “User” by default. The system administrator configures user rights.	System administrator assigns and configures user roles and rights
User name format: domain\user_name	User name format: any format or character, except \

Accounts

CPWS includes the following user accounts with special privileges:

- **Admin account**

  The Admin account is a CPWS user account that gives access to workstation functionality that can only be used by the system administrator, such as the Administrator tool.

  The Admin account can perform every possible action. To prevent abuse, change the password of this account after installation.

- **SA account**

  The SA account is an MSDE server administrator login that gives access to functionality related to the database.

  By default, the SA account password is `Cardio.Perfect`.

  To prevent abuse, change the password for this account after installation.

A word on HIPAA

As of April 2003, the Privacy provisions of the US Health Insurance Portability and Accountability Act of 1996 are mandatory for all entities except small health plans. Among other things, HIPAA requires all repositories of Healthcare Information to provide access only to authorized individuals and to maintain an audit trail of activity performed with that data.

Welch Allyn CardioPerfect keeps track of this audit trail in a separate database called ccdb_audit which is installed during set-up. When upgrading from an older version, the audit database may not yet exist. Upon detecting this situation, CPWS prompts you to run the dbbuilder tool to correct this situation.

The HIPAA mode can be switched on and off from the Administrator tool. For more information, see “HIPAA audit functions” on page 38.

Additional functionality of HIPAA-mode

- Audit trail of log-ins and attempted logins
- Audit trail of data access, change, deletion, print-out, import and export of patient and test data
- Anonymous access is disabled
- Inactivity time-out; after not using CPWS for a period of time, it requires reentry of your password to reactivate the program

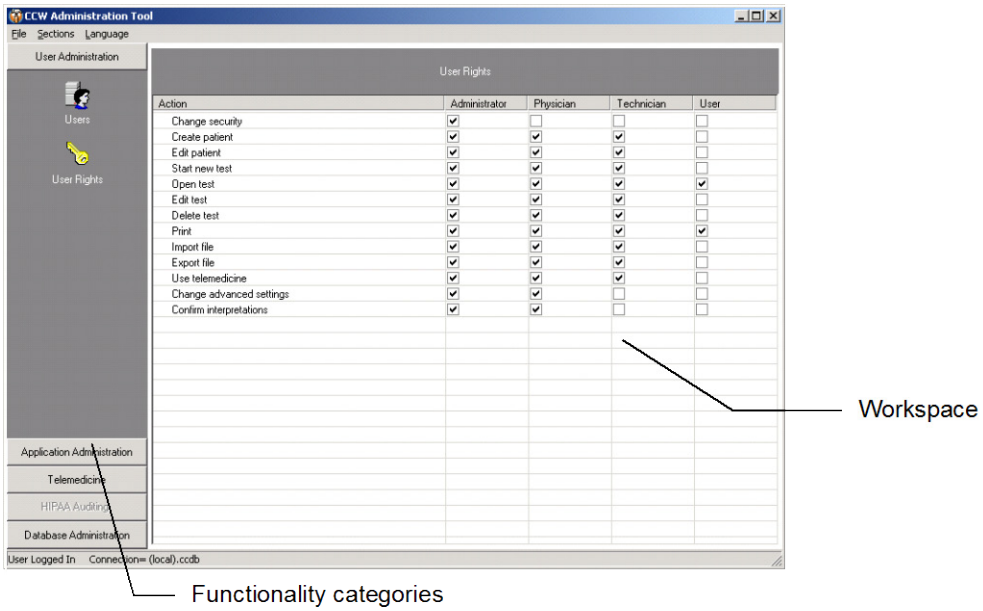
Considerations for system administrators

In the HIPAA Settings of the Administrator tool, CPWS adds security features and audit functionality to enable a fully HIPAA-compliant environment.. In addition to this basic functionality, the overall system configuration must also provide for measures such as security policies on passwords (for example, password complexity and aging). We strongly recommend using NT authentication along with the security policy enforcement that the NT Server provides.

14. Administrator tool

Use the Administrator tool to perform user and data administration, and to back up the database.

1. In the Windows Start menu, select **Programs** > **Welch Allyn** > **Administrator Tool**.
2. Enter your password. The Administration Tool screen appears.



The main window contains the following elements:

Functionality categories

You can access the following categories of administrator functions from this pane:

- User Administration
- Application Administration
- Telemedicine
- HIPAA Auditing
- Database Administration

From these categories, you can select various administrator tasks.

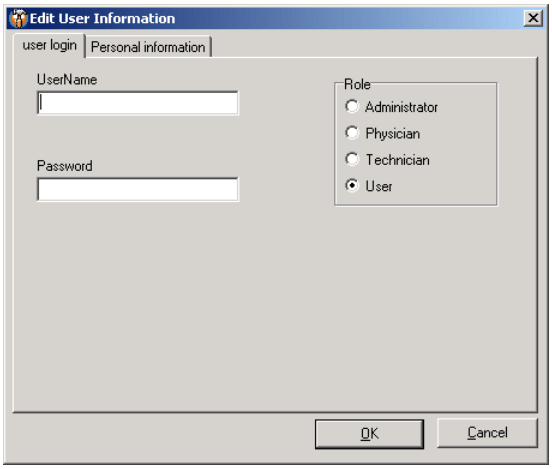
Workspace You perform administrator tasks in the workspace, located in the right pane.

14.1 User accounts

1. Start the Administration Tool.
2. Select **User administration** in the left pane.

Create an account

1. Click **New User** under **Users**. The **Edit user information** dialog box appears.



2. In the **Edit user information dialog** box, enter the user name for the user that you want to add.

If you use...	Then the user name format is...
NT authentication	DOMAIN\user name.
Database authentication	Any name with any characters except \.

3. Enter a user password. If you use NT authentication, you cannot enter a password because the NT password will be used.
4. Select a role for the user.
5. In the **Personal Information** tab, enter the user's personal information.

Notes:

- When you do not enter a password for database authentication, users can log in to CPWS without supplying a password.
- When you use database authentication, users can change their password in CPWS.

Deactivate an account

When you want to prevent an end user from working with CPWS (for instance, because you want to delete the user in the near future and want to prevent him or her from accessing the data), you can deactivate that user.

When you deactivate a user, the user account is not deleted, but made inactive. The user can no longer access CPWS.

1. Make sure the user is not currently logged in.
2. Click **Users**.
3. Click the user that you want to deactivate or reactivate.
4. Click one of the following:

Make inactive	The user account is deactivated and the user cannot access CPWS. The user account still exists.

Make active	The Edit user information dialog box appears. If you use database authentication, enter a new password for the user. The user is reactivated immediately.

Delete an account

You can delete a user only when there are no tests in the database that were recorded or interpreted by that user. Since most users have recorded tests, this normally means that you cannot delete a user. In such cases you need to de-activate the user. An inactive user cannot work with CPWS.

1. Click **Users**.
2. Click the user that you want to delete.
3. Click **Remove user**. The user is deleted.

Assign a role

With database authentication, roles are not automatically assigned. For the security system to work, you must assign these roles.

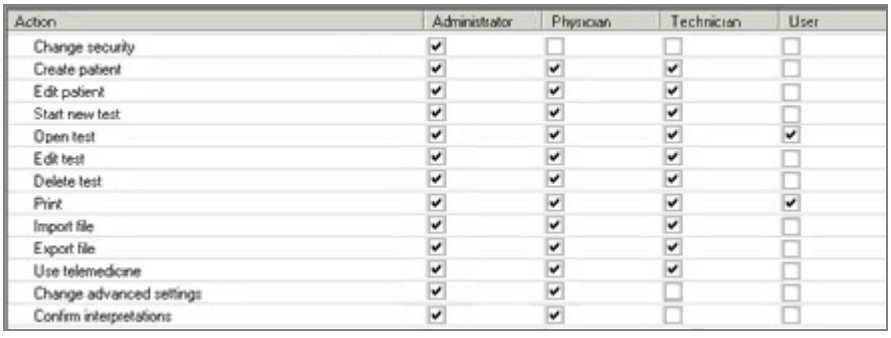
With NT authentication, every user is, by default, assigned the role of User. For the security system to allow extended access, you must change these roles.

1. Under Users, click the user whose role you want to change.
2. Click **Edit user**. The **Edit User Information** dialog box appears.
3. Select one of the following roles:
   - Technician
   - Physician
   - User
   - Administrator

Grant rights

CPWS comes with four sets of user rights, one for each user role. However, you can change these user rights. Note that you cannot change user rights at the user level. You can only change user rights at the user role level.

1. Click **User rights**.
2. In the User rights matrix, locate the user role column for which you want to change the rights.



3. Determine whether to allow each action:

   ☑ (**Checked**) Users assigned this role can perform the action.

   ☐ (**Unchecked**) Users assigned this role cannot perform the action.

Note: You cannot edit the right to change security settings for administrators; administrators always have this right to make sure there is always someone that can access the system.

Set up a password

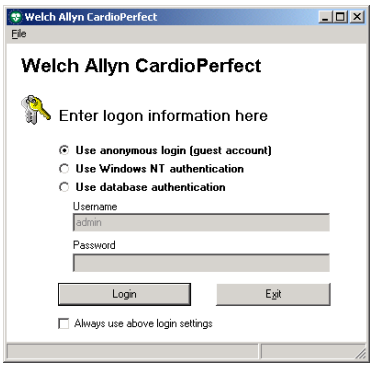
When you use database authentication, you can reset a user password with a new password. You can use this function, for example, when end users have forgotten their password.

1. Click **Users**.
2. Click the user for which you want to change the user password.
3. Click **Edit**. The **Edit User Information** dialog box appears.
4. Enter a different password.

Hide the login window at startup

When you use NT authentication, you can choose to hide the Login window for the end user. When you do this, CPWS automatically uses the NT user information and bypasses the login screen.

1. On the client, start CPWS and wait for the Login window to appear.



2. In the Login window, select **Always use above login settings**.

14.2 Physicians

CPWS uses predefined lists of physicians, specialties, and locations that are maintained on the server. This way, all clients that are connected to the same server have the same information available.

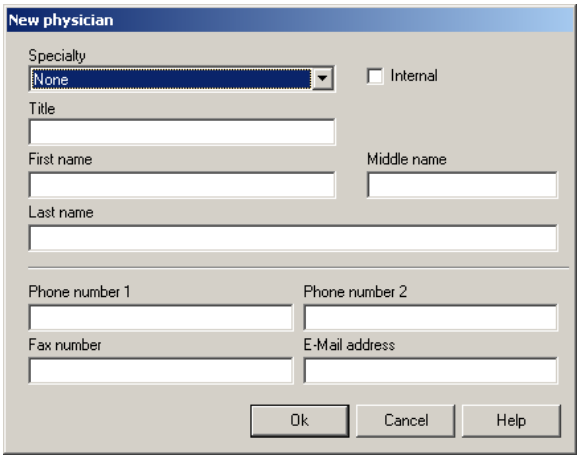
1. Open the Administration Tool.
2. Select **Application Administration**.
3. Select the table you want to configure.

Configure the physicians list

Select **Physicians**.

Add a physician

1. Click **New Physician**. The **Physician** dialog box appears.



2. Select the Specialty to which you want to link the physician and enter the information of the physician that you want to add.

Edit a physician

1. Click the physician that you want to edit.
2. Click **Edit**. The **Physician** dialog box appears.
3. Edit the physician information.

Delete a physician

Important: You can only delete a physician when there are no tests linked to that physician.

1. Click the physician that you want to delete.
2. Click **Delete**. The physician is deleted.

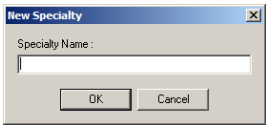
14.3 Specialties

Configure the specialties list

Select **Specialties**.

Add a specialty

1. Click **New Specialty**. The **Add Specialty** dialog box appears.



2. Enter the name of the specialty that you want to add.

Edit a specialty

1. Click the specialty that you want to edit.
2. Click **Edit**. The **Edit Specialty** dialog box appears.
3. Edit the name of the specialty.

Delete a specialty

Important: When you delete a specialty, you also delete it for all physicians who are linked to that specialty.

1. Select the specialty that you want to delete.
2. Click **Remove Specialty**. The specialty is deleted.

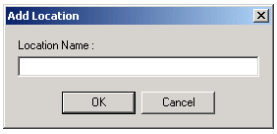
14.4 Locations

Configure the locations list

Select **Locations**.

Add a location

1. Click **New Location**. The **Add Location** dialog box appears.



2. Enter the name of the location that you want to add.

Edit a location

Important: When you change the name of a location, it is automatically changed everywhere in the system, including existing tests.

1. Select the location that you want to edit.
2. Click **Edit**. The **Edit Location** dialog box appears.
3. Edit the name of the location.

Delete a location

Important: When you delete a location, you also delete it for all tests that are linked to that location.

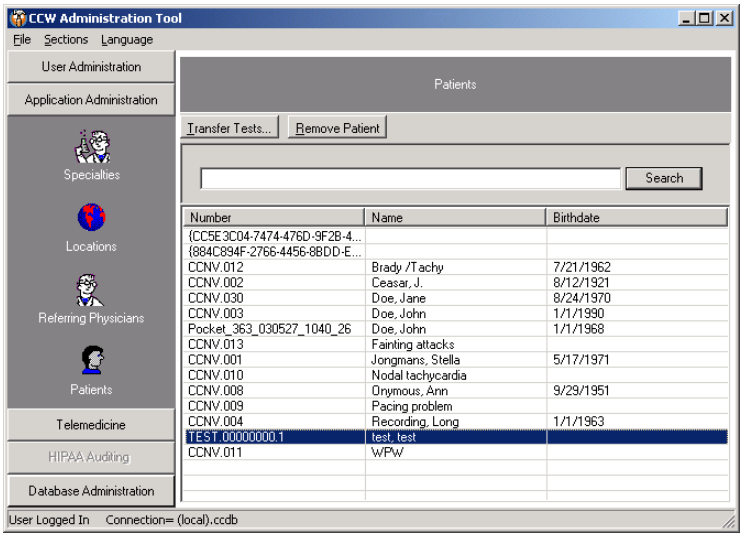
1. Select the location that you want to delete.
2. Click **Remove Location**. The location is deleted.

14.5 Patients

Access the patient list

CPWS maintains a list of patients on the server.

Under Application administration, click **Patients**.



Delete a patient

Only someone with system administrator rights can delete a patient from CPWS in the Administrator tool.

WARNING: When you delete a patient, you delete all the patient data from the database. If there are tests in the database for this patient, these tests are deleted!

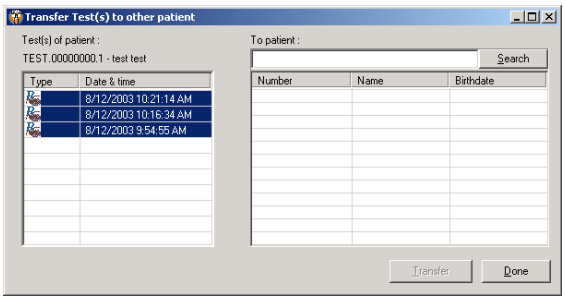
1. Find the patient that you want to delete.
2. Click **Delete**.

14.6 Tests

Transfer a test

One mistake that can occur is recording a test for the wrong patient. With the Administrator tool, you can correct this by transferring a test from one patient to another.

1. Find the patient for whom the test was mistakenly recorded.
2. Click **Transfer test**. The **Transfer test** dialog box appears.



3. Select the test you want to transfer. To select several tests, press and hold the **Shift** key.
4. Find the patient to whom you want to transfer the test with the **Search** button and select that patient by clicking the name.
5. Click **Transfer**. The tests transfer to the selected patient.

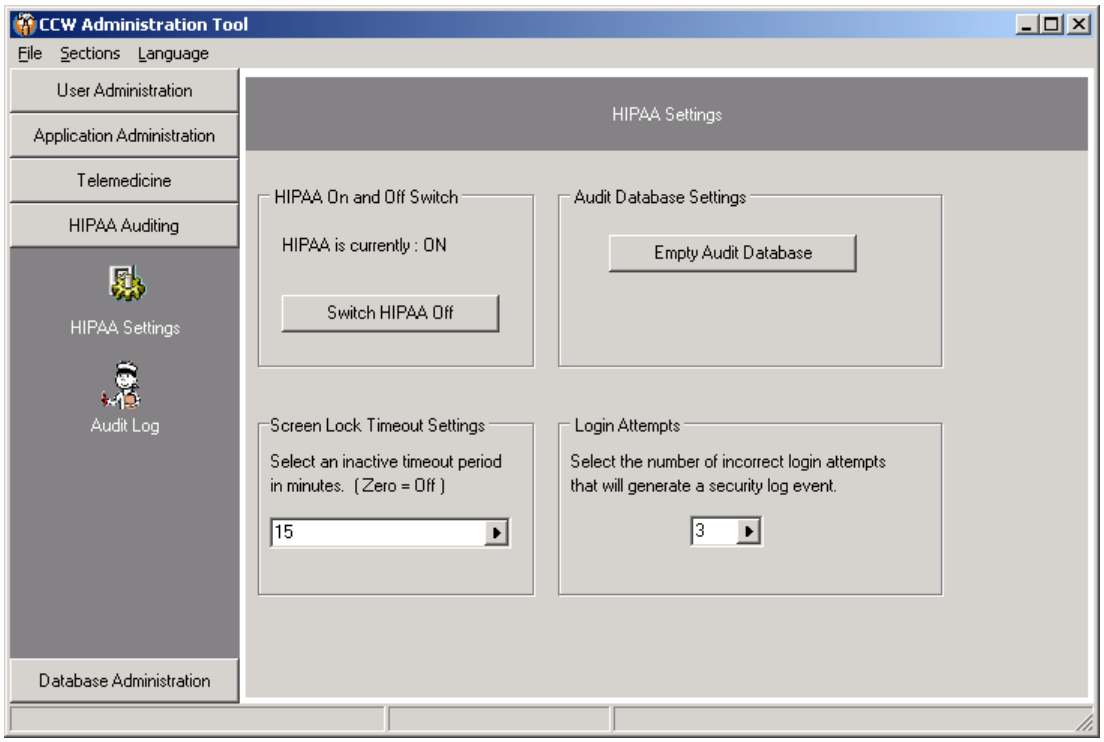
14.7 HIPAA audit functions

You can modify the HIPAA-related settings in the HIPAA section of the Administrator tool.

HIPAA settings

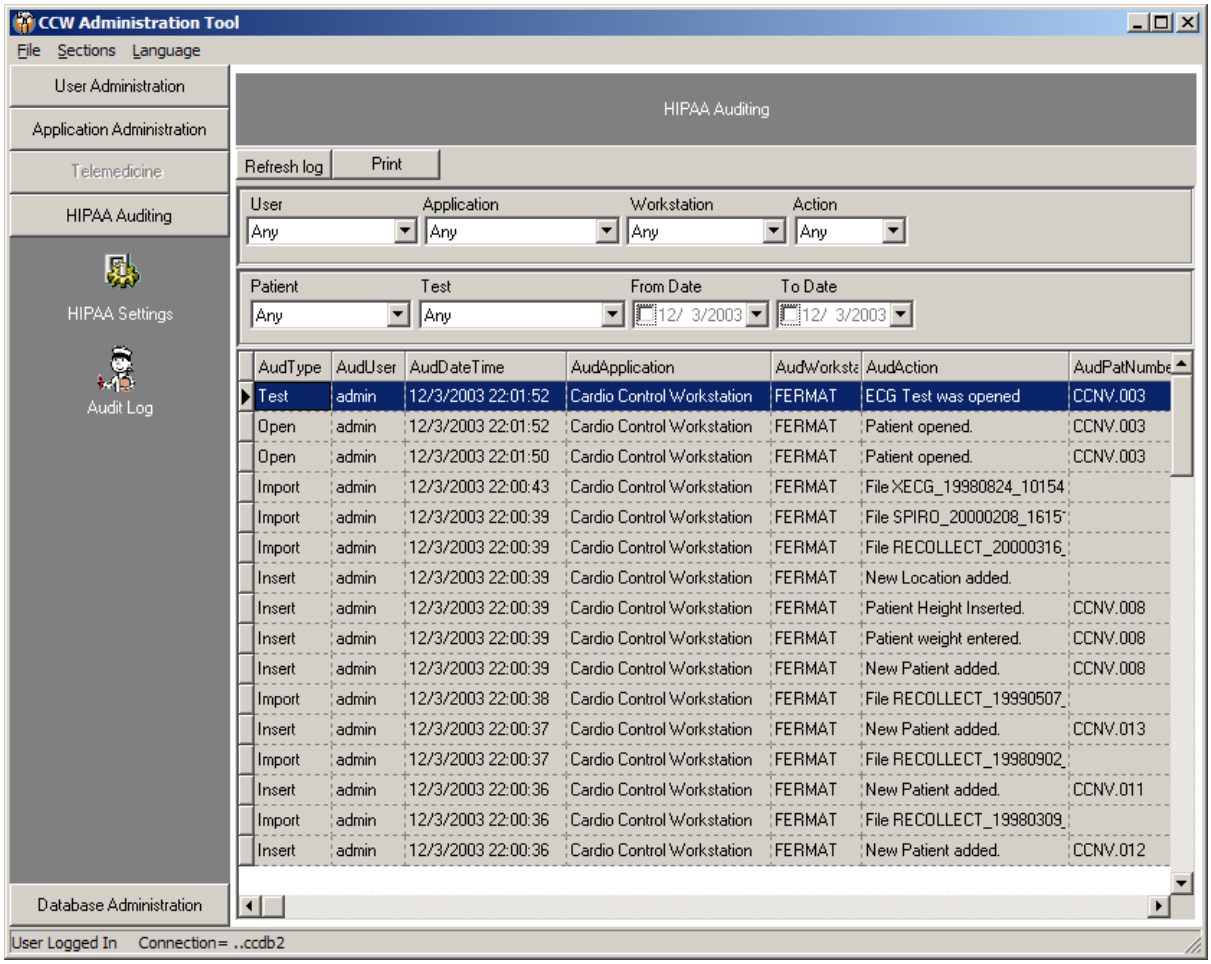
In the HIPAA Settings screen, the following items can be modified:

- **HIPAA On and Off Switch**: Switches HIPAA mode on or off
- **Empty Audit Database**: Use this to purge the audit trail.
- **Screen Lock Timeout setting**: Sets the number of minutes of inactivity allowed before the program locks. Once locked out, you must re-enter the password to regain access.
- **Login Attempts**: Sets the number of unsuccessful login attempts allowed before a security log event is generated.


CCW Administration Tool
File
Sections
Language
User Administration
Application Administration
Telemedicine
HIPAA Auditing
HIPAA Settings
Audit Log
Database Administration
HIPAA Settings
HIPAA On and Off Switch
HIPAA is currently : ON
Switch HIPAA Off
Audit Database Settings
Empty Audit Database
Screen Lock Timeout Settings
Select an inactive timeout period in minutes. (Zero = Off)
15
Login Attempts
Select the number of incorrect login attempts that will generate a security log event.
3

HIPAA Audit log viewer

The audit log entries generated as users access CPWS can be viewed with the Administrator tool under the Audit Log function. You can either choose to view all audit log entries (default), or you can enter certain criteria for selecting specific kinds of audit log events, like Security or actions performed by a specific user.


CCW Administration Tool
File Sections Language
User Administration
Application Administration
Telemedicine
HIPAA Auditing
HIPAA Settings
Audit Log
Database Administration
HIPAA Auditing
Refresh log
Print
User
Application
Workstation
Action
Any
Patient
Test
From Date
To Date
12/ 3/2003
AudType AudUser AudDateTime AudApplication AudWorksta AudAction AudPatNumbe
Test admin 12/3/2003 22:01:52 Cardio Control Workstation FERMAT ECG Test was opened CCNV.003
Open admin 12/3/2003 22:01:52 Cardio Control Workstation FERMAT Patient opened. CCNV.003
Open admin 12/3/2003 22:01:50 Cardio Control Workstation FERMAT Patient opened. CCNV.003
Import admin 12/3/2003 22:00:43 Cardio Control Workstation FERMAT File XECG_19980824_10154
Import admin 12/3/2003 22:00:39 Cardio Control Workstation FERMAT File SPIRO_20000208_1615
Import admin 12/3/2003 22:00:39 Cardio Control Workstation FERMAT File RECOLLECT_20000316_
Insert admin 12/3/2003 22:00:39 Cardio Control Workstation FERMAT New Location added.
Insert admin 12/3/2003 22:00:39 Cardio Control Workstation FERMAT Patient Height Inserted. CCNV.008
Insert admin 12/3/2003 22:00:39 Cardio Control Workstation FERMAT Patient weight entered. CCNV.008
Insert admin 12/3/2003 22:00:39 Cardio Control Workstation FERMAT New Patient added. CCNV.008
Import admin 12/3/2003 22:00:38 Cardio Control Workstation FERMAT File RECOLLECT_19990507_
Insert admin 12/3/2003 22:00:37 Cardio Control Workstation FERMAT New Patient added. CCNV.013
Import admin 12/3/2003 22:00:37 Cardio Control Workstation FERMAT File RECOLLECT_19980902_
Insert admin 12/3/2003 22:00:36 Cardio Control Workstation FERMAT New Patient added. CCNV.011
Import admin 12/3/2003 22:00:36 Cardio Control Workstation FERMAT File RECOLLECT_19980309_
Insert admin 12/3/2003 22:00:36 Cardio Control Workstation FERMAT New Patient added. CCNV.012
User Logged In Connection= ..ccdb2

14.8 Database functions

In a computer environment, there is always a possibility that something goes wrong: database tables may be lost or corrupted. To limit the possible risk of data loss you should back up your database regularly.

With the Administrator tool you can make a full backup your database. During the backup, copies of the database and the transaction log are made. These copies can be used to restore the database after the database has become corrupt or is lost during a catastrophic event.

You can back up a database in the following ways:

- **Manually**: The simplest way to back up the database. You can manually back up the database at any time you want.
- **Automatically**: A backup or a series of backups at a fixed date and time. To back up the database automatically you must schedule a backup.

Access database functions

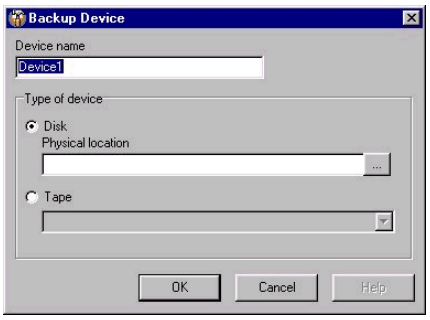
In the Administration tool, select **Database Administration**.

Create a backup device

Before you can back up the database, you need to create a backup device. A backup device, a place to store the backup, can be a file on your hard disk or network drive, or a tape.

We advise you to create a backup device on a different hard disk than the one that contains the database. If you do not do this, you run the risk of losing both your database and your backup copy if your computer crashes.

1. Click **Backup database**.
2. Click **Add device**. The **Backup device** dialog box appears.



3. Enter the name of the backup device.
4. Select the device type.

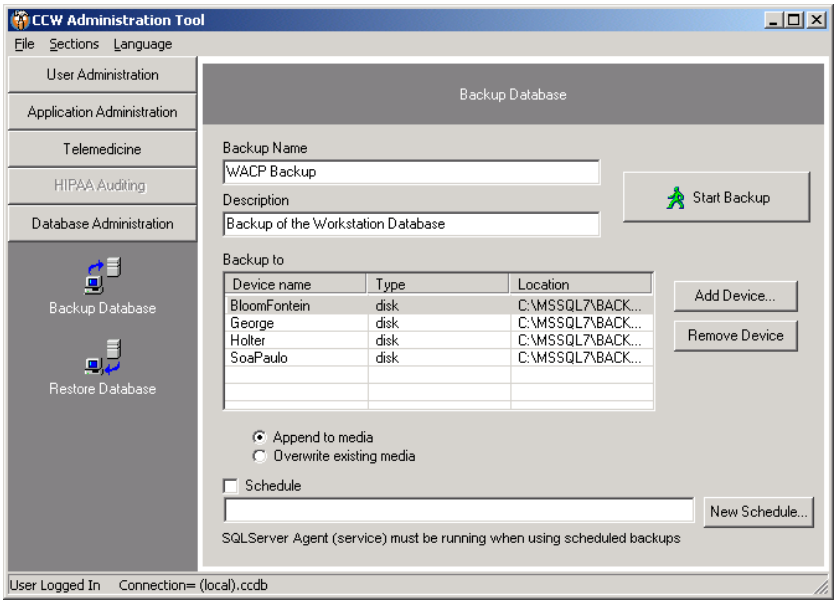
If you select...	Then...
Disk	Select the location where the backup is created and enter a filename. When you select a network drive, make sure you have the proper permissions to access the backup directory and file.
Tape	Select the tape and enter a filename. Make sure that the tape drive is connected to the computer that runs SQL server.

Make a manual backup

The simplest way to create a backup is to create one manually. You can do this anytime you want; end users do not have to log out.

Before you can make a backup, you need to create a backup device.

1. Select **Backup database**.



2. Enter a name and a description for the backup.
3. Select the backup device to which you want to back up the database.
4. Select the type of backup that you want to make.

If you select…	Then…
Append to media	The backup is added to the already existing backup on the selected backup device.
Overwrite existing media	The backup overwrites the already existing backup.

4. Click **Start Backup** to start the backup process.

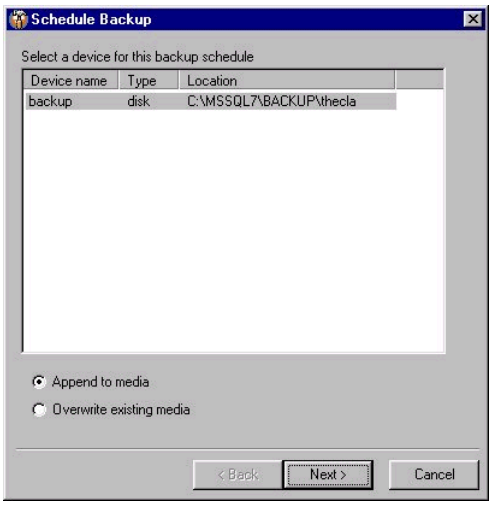
Schedule an automatic backup

If you want to make automatic backups of the database, you need to schedule the times at which the backup is made. You can schedule a single backup, or a recurring backup.

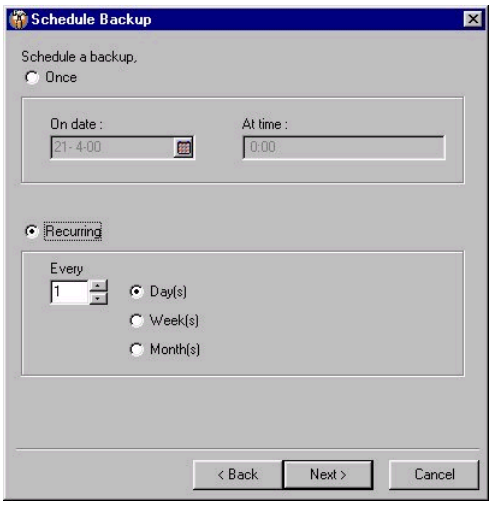
Note: This feature is not available in SQL Server Express 2005.

Important: Make sure that the computer is switched on at the time you scheduled the backup. Also ensure that SQL Server Agent is running.

1. Click Backup database.
2. Select the Schedule check box and click **Change**. The **Schedule backup** dialog box appears.

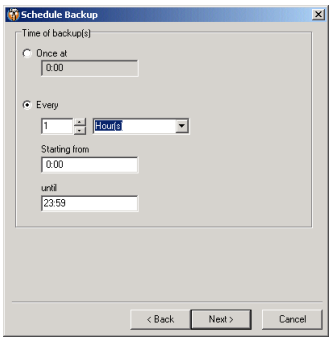


3. Select the backup device and backup type you want to use and click **Next**.
4. Select whether you want to schedule a single backup or a recurring number of backups.

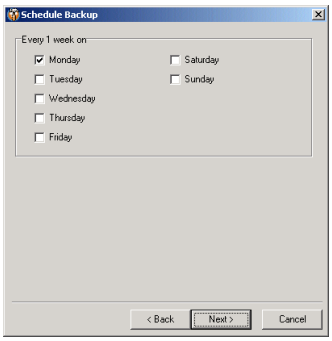


If you select...	Then...
Once	Enter the date and time at which the backup must be made and click **Next**.
Recurrent	Enter the recurrence pattern and click **Next**.

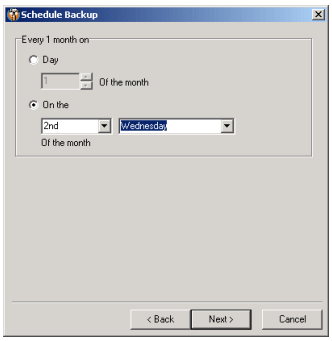
If you scheduled a recurrent backup, depending on which option was selected one of these dialogs appears:



Days



Weeks



Months

6. Enter the preferred schedule in the next steps. Click **Next**.
7. A summary shows details of the backup schedule. Verify that this information is correct and click **OK**.

Restore the database

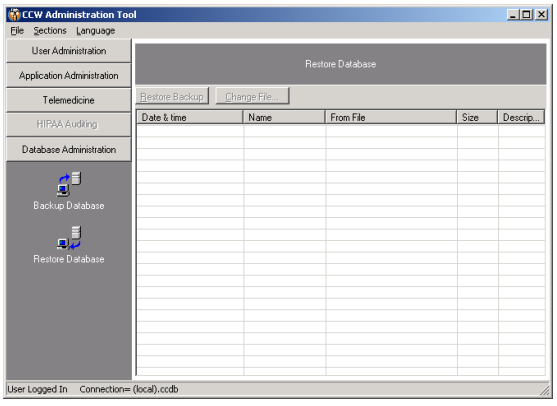
Restoring is the process of recovering a damaged, corrupt or missing database. Several situations can arise that might require the recovery of the database.

Prior to the recovery of the database, evaluate the situation carefully. What is wrong with the database and what is the date of the most recent database backup?

Important: When restoring a database, you can only recover the database to the point of the latest backup. Any changes made to the database after the last backup will be lost.

---

1. Make sure that all users are logged out. You cannot restore the database while it is being used.
2. Under **Database Administration**, click **Restore database**.



3. Select the backup that you want to restore. If you have moved your backup files to a different location, use the **Change File** button to locate the backup files.
4. Click **Restore**. A warning appears.
5. Click **Yes** to start with the restore process. When the restore process is successful, a message appears.

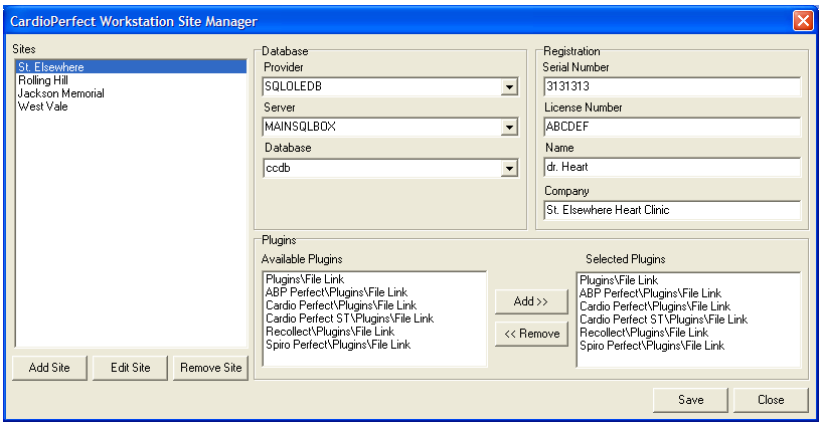
15. SiteManager

CPWS now includes sites, a way to group users that log in to the same server but belong to different practices, offices, or other administrative units. All users assigned to a site have the same settings for the database connection, license information and available plug-ins.

You use SiteManager to manipulate these settings, and to create and maintain site definitions. You can add, update, and remove sites. SiteManager is available in the CPWS main installation directory. To use SiteManager, you must have Administrative privileges.

To set up SiteManager:

1. In SiteManager, define one or more sites. The CardioPerfect server changes to Site mode.



2. In CPWS:
   A. Assign each user to a site. Users can now log in to CPWS.
   B. In CPWS, set up how users specify a site when logging in:
      - (Default) Select a site from a drop-down menu on the login screen.
      - Specify a site in the the user's login script.

        To specify a site, navigate to the following in the user's registry:

        `HKCU\software\cardio control\mdw\ConnectionString`

        Change the following registers to the values shown:

        name: DefaultSite
        type: REG_SZ
        value: *SiteGUID*

        Note: The value for *SiteGUID* must be the same as the key under which the site was generated in HKLM\software\cardio control\mdw\Sites.

      - Specify a site in the the user's login script and hide the site selection field in the login screen.

        To specify a site, see the previous bullet. To hide the site selection field, navigate to the following in the user's registry:

        `HKCU\software\cardio control\mdw\ConnectionString`

        Change the following registers to the values shown:

        name: DontAllowSiteSelection
        type: REG_DWORD
        value: 1

16. OS-specific installation instructions

Windows Server 2003 and Server 2008

By default, standard Windows users cannot perform spirometry calibration because they do not have the necessary permissions to edit certain registry keys.

Grant access to users who need to make changes to the local machine registry:

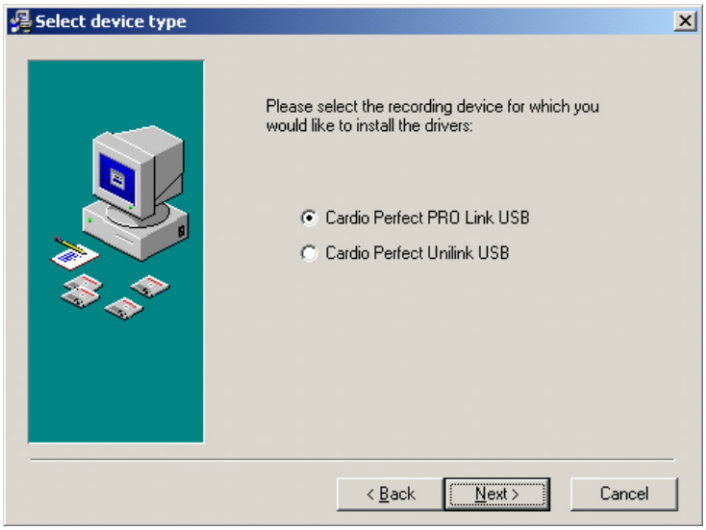
- HLKM\Software\Cardio Control\
- HKLM\Software\Spirometry\D9W\

A. Installing legacy Unilink USB drivers

If you use a CardioPerfect Portable or CardioPerfect MD device connected through USB, you will need to install the Unilink USB drivers. The standard driver supplied with the system will support the PRO recorder only.

To install or reinstall Unilink USB Drivers

1. Close all running programs.
2. On the CDROM, navigate to `Drivers\PROLink-UniLink Usb\Legacy`.
3. Indicate your ECG device connector: **Unilink USB** for legacy CardioPerfect ECG recorder models and click **Next**.


Select device type
Please select the recording device for which you would like to install the drivers:
Cardio Perfect PRO Link USB
Cardio Perfect Unilink USB
< Back
Next >
Cancel

4. Click **Next** to start the installation of the driver.
5. Click **Finish**.

B. Install CPWS from the Windows Active Directory

Installation notes

- See “System requirements” on page 11 before beginning installation.
- Make sure that Windows Server with Active Directory and Group Policy Management is enabled.
- Make sure that workstations are members of the domain network.
- If your client PC is running Windows Vista, make sure that UAC is turned off during the remote install.

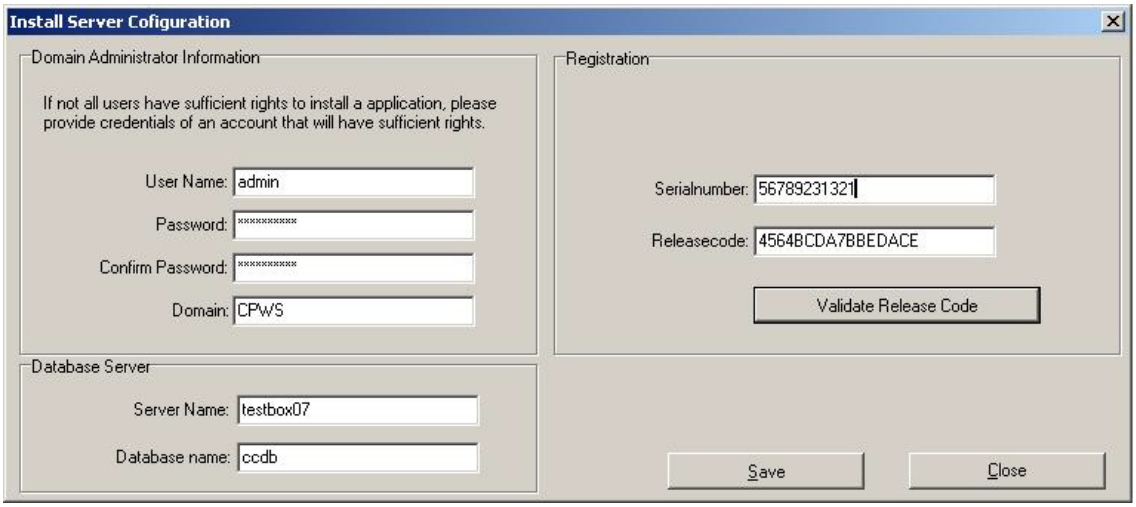
Installation steps

The installation consists of the following major steps:

- Initial preparation
- Creating the active directory organizational unit
- Moving users to the organizational unit
- Creating a new Group Policy Object (GPO)
- Assigning a GPO to a group of users
- Assigning an image to the group policy
- Starting the install on a Client PC
- Device driver association

Initial preparation

1. Insert the CPWS installation CD into the PC’s CD drive.
2. If autorun starts, press **Exit** to exit the installer.
3. Copy the CPWS installation image from the installation CD to a network location that all users in the domain can access.
4. Run InstallServerSetup.exe.



5. Enter the following:

Domain Administrator Information	Enter a user name password and domain name. The user name must have sufficient administration rights to install software on the computers in the domain. If you don't provide any information in the domain administrator section, the domain users must have enough rights to install software.
Database Server	Enter the server name and database to which CPWS software should connect. If you leave this section blank, the installer uses default settings.
Registration	Enter the serial number and release code from the purchase of your CPWS software. If you leave this section blank, CPWS prompts you to enter this information the first time CPWS launches.

6. Press **Save**.
7. Press **OK**.

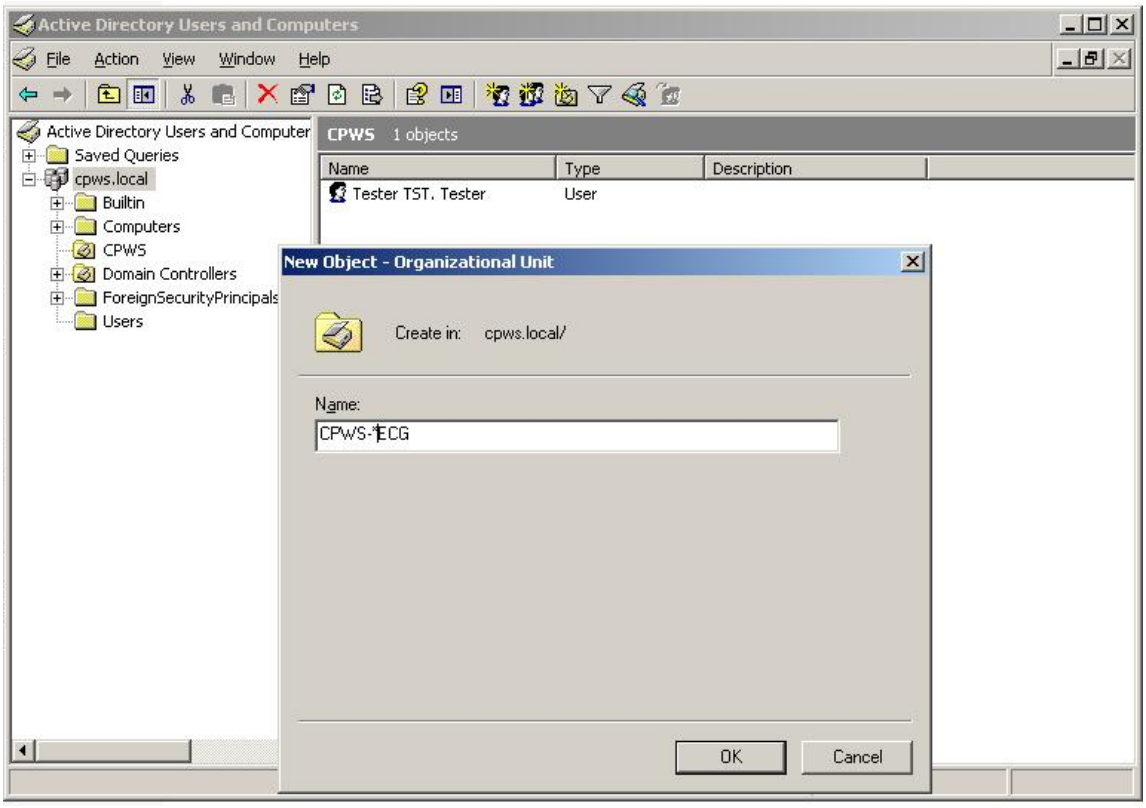
Create the active directory organizational unit

These steps create a specific CPWS user group.

1. Go to the **Active Directory Users and Computers** window and find the organizational unit where you want to install CPWS.

   If no organizational units exist in your domain, you can create a new one and add users to this group for whom you want CPWS installed.

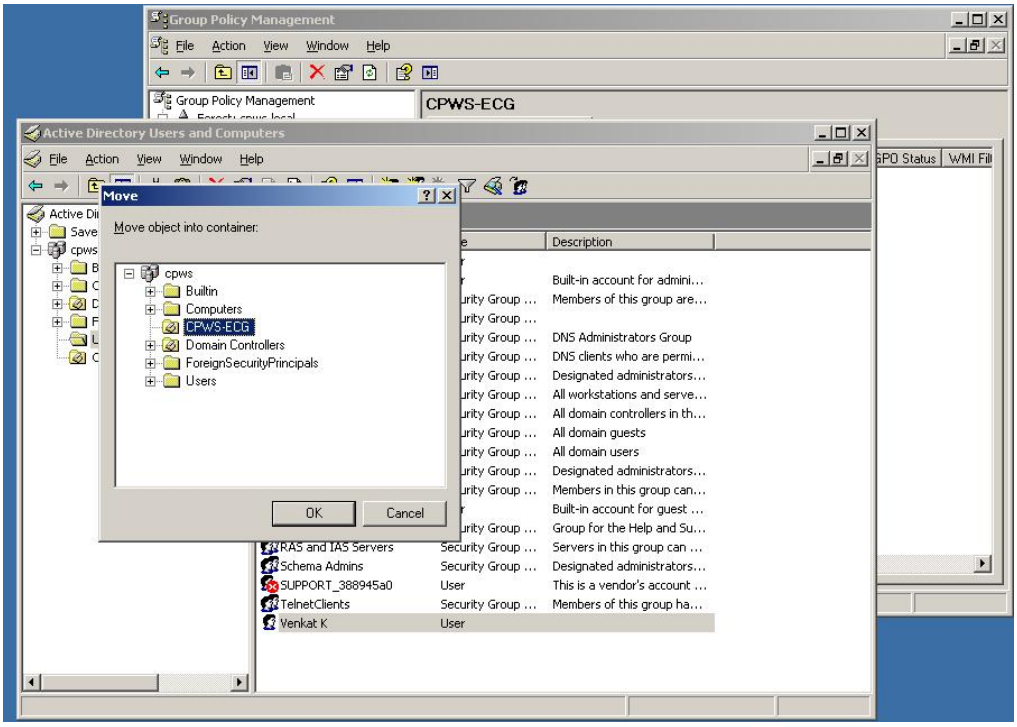
   The next figure shows how to create a new organizational unit called CPWS-ECG for the domain cpws.local.



Move users to the organizational unit

To add users to the created users group:

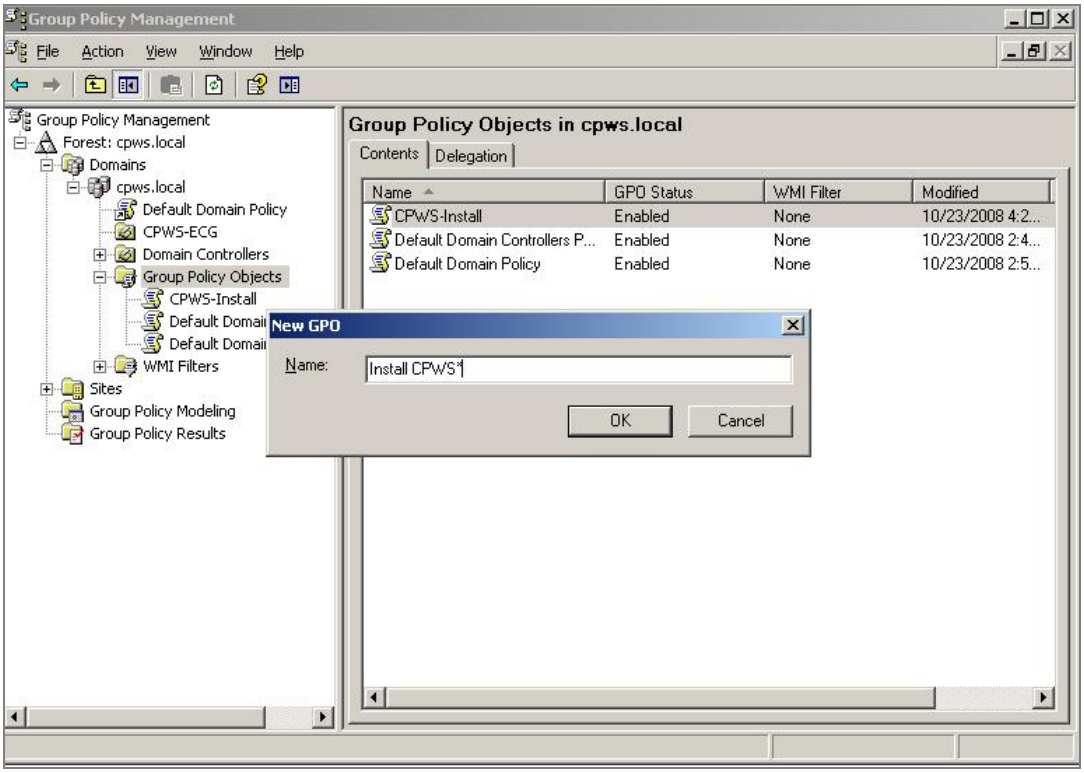
1. Go to **Active Directory Users and Computers**.
2. Go to the **Users** folder.
3. Select the users you want to move to the new organizational unit.
4. Right click and select **move**.
5. Select the group as shown in the next figure.



Create a new Group Policy Object (GPO)

To support CPWS installation based on a specific user group, complete the following steps.

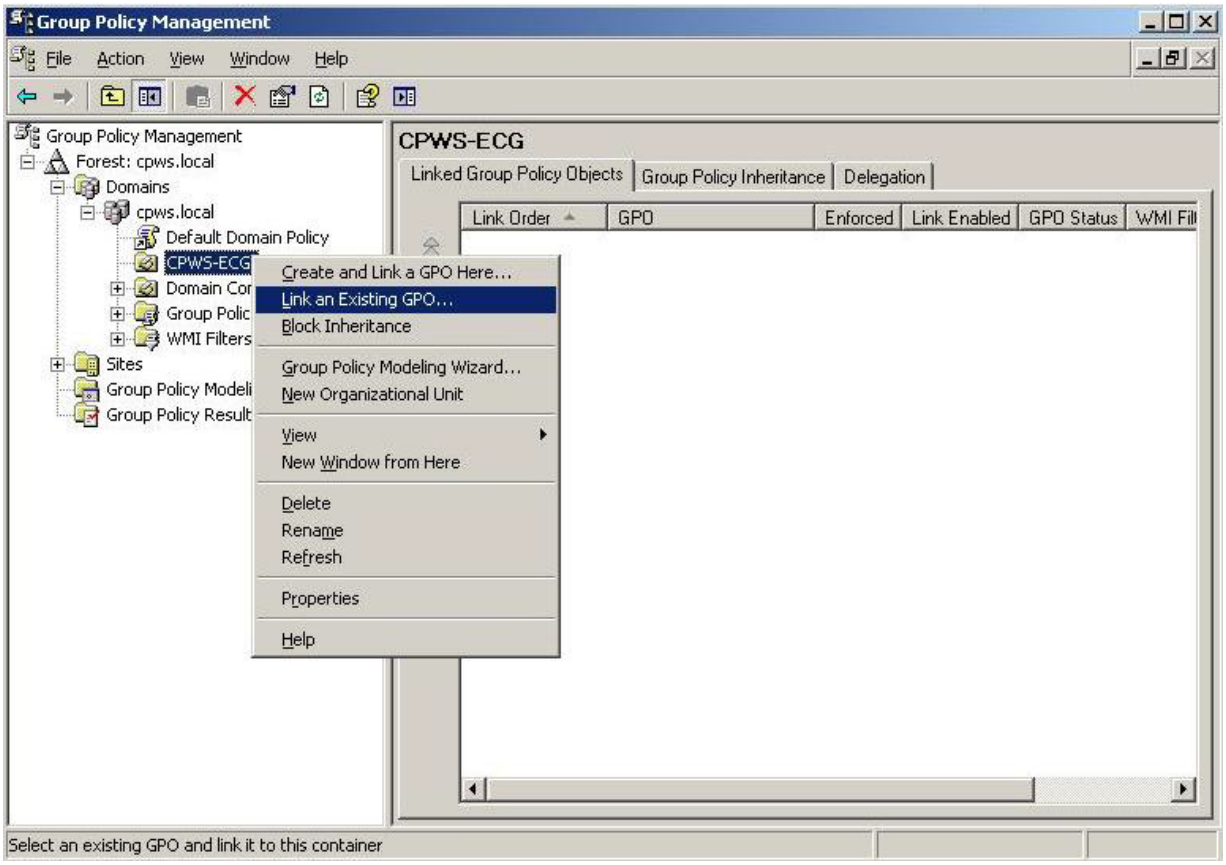
1. Go to **Group Policy Management** from administrative tools.
2. Select **Domains > cpws.local** > **Group Policy Objects**.
3. Right click and select **New**.
4. Enter a name for the GPO.



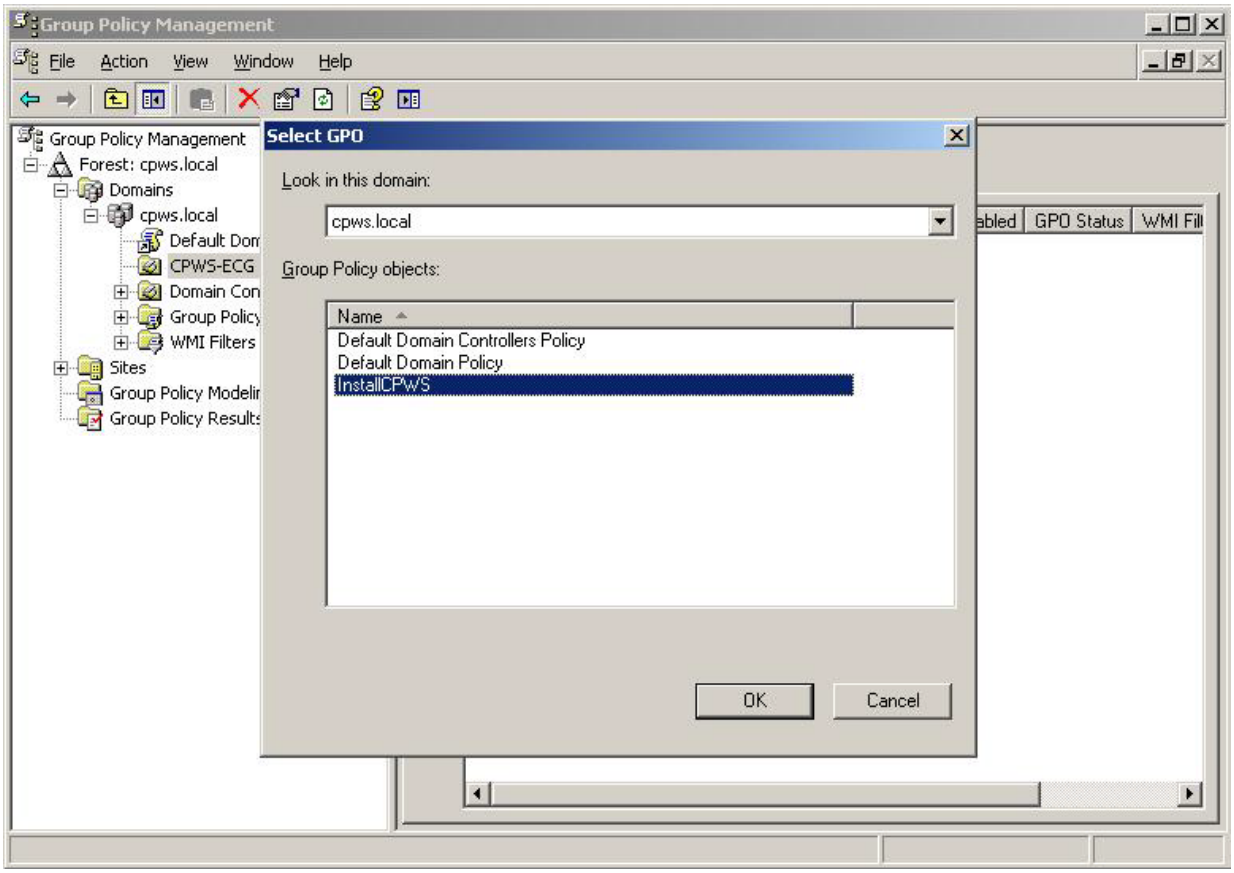
5. Press **OK**.

Assign a Group Policy Object (GPO) to a group of users

1. Select **Domain** > **cpws.local** > **CPWS-ECG**.



2. Right click and then select **Link an Existing GPO**.
3. Select the new GPO.

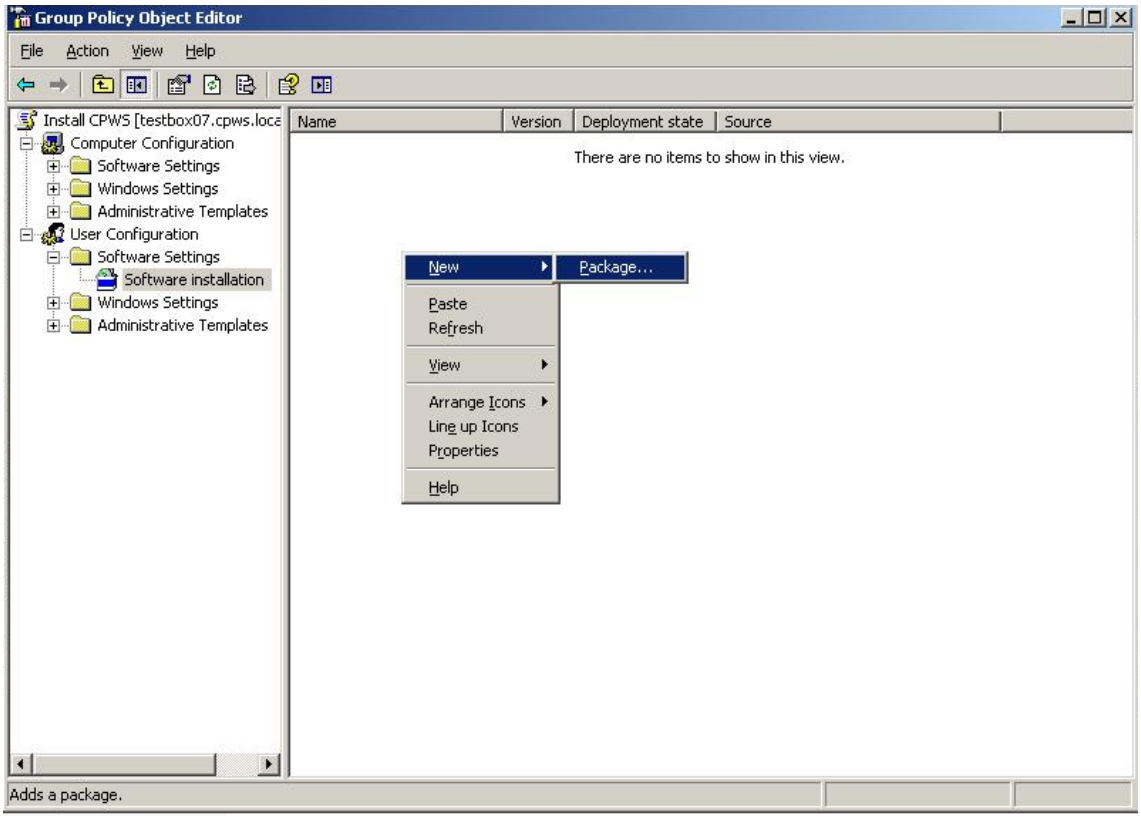

Group Policy Management
File Action View Window Help
Group Policy Management
Forest: cpws.local
Domains
cpws.local
Default Dom
CPWS-ECG
Domain Con
Group Policy
WMI Filters
Sites
Group Policy Modelir
Group Policy Results
Select GPO
Look in this domain:
cpws.local
Group Policy objects:
Name
Default Domain Controllers Policy
Default Domain Policy
InstallCPWS
OK
Cancel
abled
GPO Status
WMI Fil

4. Click **OK**.

Assign an image to the group policy

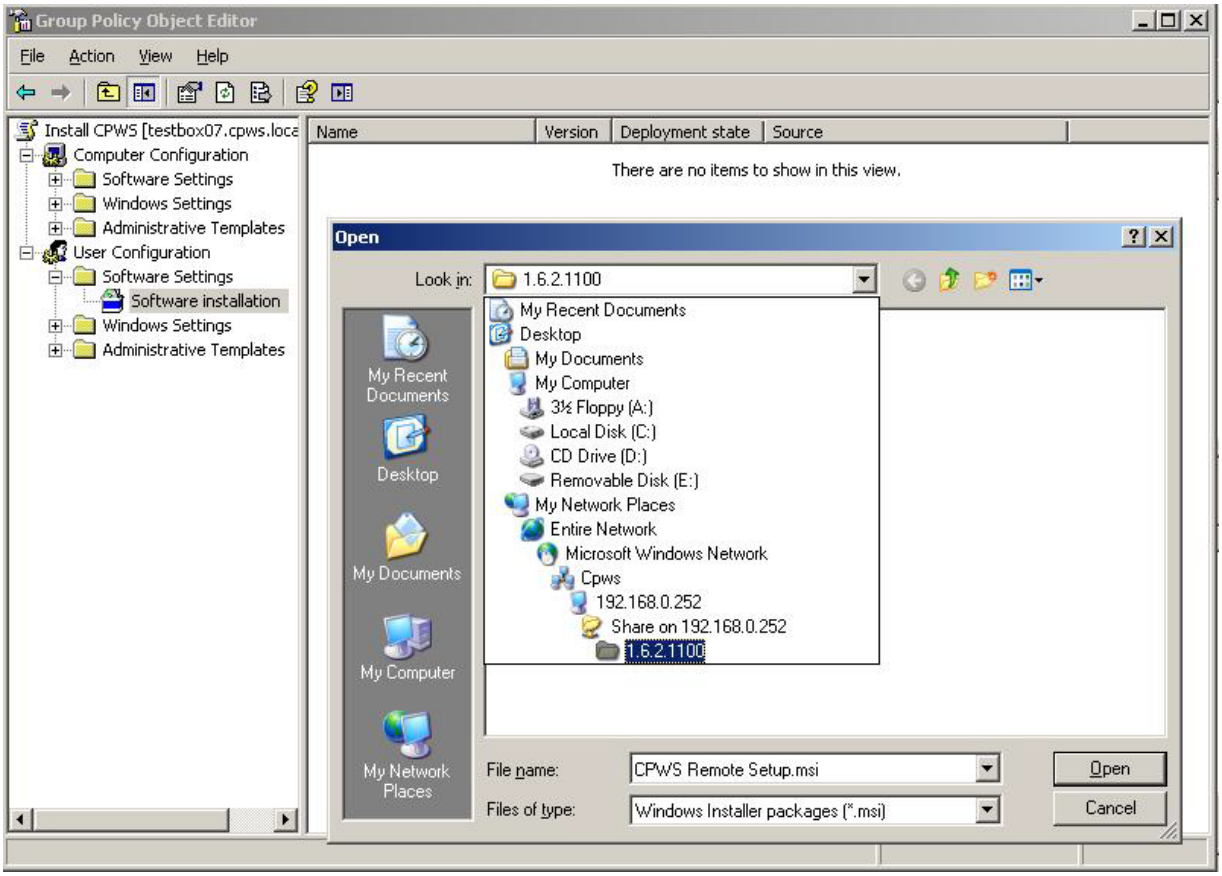
1. Go to **Group Policy Management**.
2. Select **Group Policy objects**.
3. Edit the GPO you just created (InstallCPWS) by right clicking the Group Policy and selecting **Edit**.

   The **Group Policy Object Editor** window appears.
4. Select **User Configuration** > **Software Settings** > **Software installation**.
5. Right click and select **New/Package**.

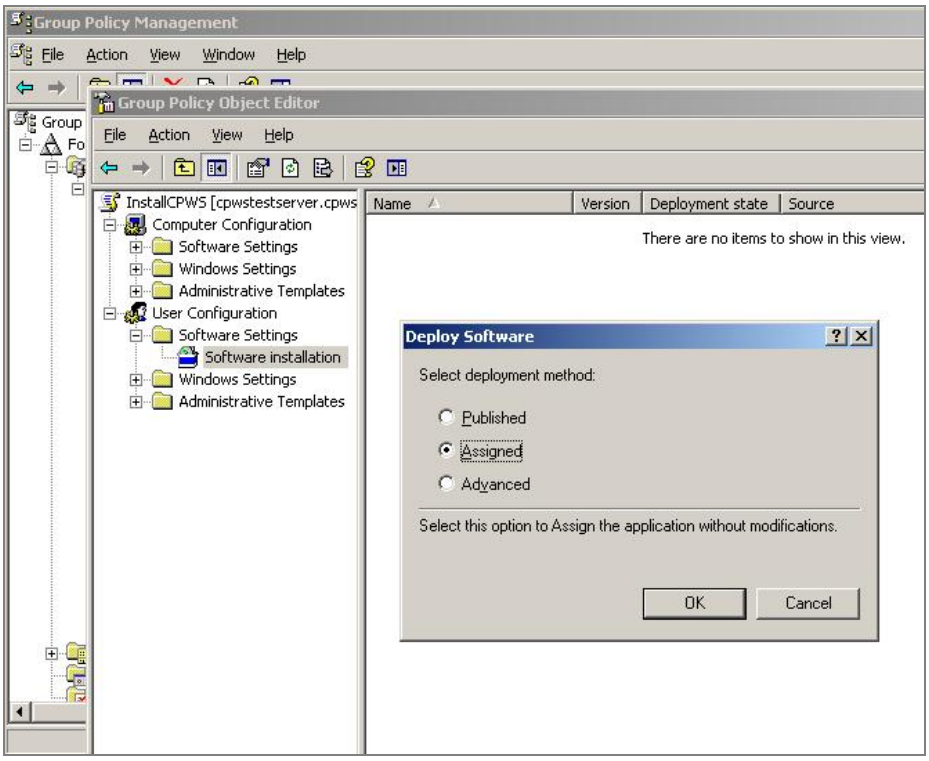


6. Select the MSI package and browse to the network location where you copied the CPWS installation image.

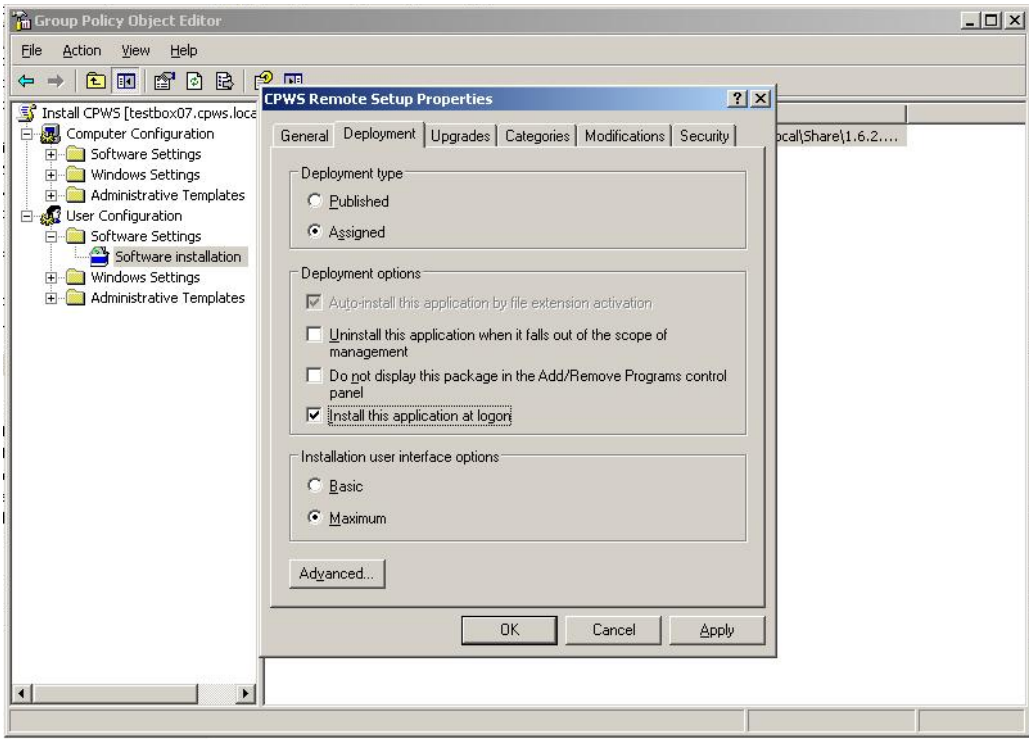
Note: You must select the “CPWS Remote Setup.msi” package from the **network location** rather than the drive letter because the network path is accessible from the client PC whereas the drive letter may not be accessible.



8. Select the installation type.
9. Click **Open**.
10. Select **Assigned**.



11. Right click the Software Installation object you just created and select **Properties**.
12. From the deployment tab, check the **Install this application at logon** checkbox and click **OK**.



The Server installation and setup is now complete.

Start the install on a client PC

After configuring the CPWS software deployment, log in to a client computer.

Note: The installation takes place before you see the desktop after logging in.

Device driver association

1. For new installations of CPWS, the **Found New Hardware Wizard** dialog box may launch when a USB device is connected after the software installation.

   Note: If you connect a ProLink USB, the drivers automatically install.

2. If the user does not have Administrator rights to install the hardware, enter the admin password to complete the installation.

   The drivers install.

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